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ABSTRACT

North Carolina's vocational/technical education (VTE) program was examined to (1) describe currently available services, (2) identify issues and concerns regarding the optimal operation and organization of VTE, and (3) draw conclusions and develop recommendations for addressing the issues and concerns identified. Data were collected from a review of current studies, issue papers, and program descriptive documents and from interviews with cognizant agency and institutional personnel. The study findings suggested that there should be an increased emphasis on preparing pupils for the world of work. Employer input and labor growth and demand projections pointed toward a two-tiered labor force with decreased specific occupational education required at the level of greatest demand and increased specific occupational education required at the level of greatest growth. It was therefore recommended that North Carolina's public school education system be restructured to deemphasize occupation-specific programs at the high school level and increase emphasis on basic skills, vocational principles and practices related to clusters of occupations, and skills and attitudes that are critical to transferability and upward mobility. Recommendations related to the state's community college system, Job Training Partnership Act programs, and teacher preparation system were also formulated. (Appendixes include the legislative mandate for the study; lists of documents reviewed and personnel interviewed; descriptive findings related to VTE provision, agency statutory responsibilities for VTE, funding mechanisms for VTE, articulation, and teacher preparation. A figure and 19 tables are also included.) (MN)

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November 1986

VOCATIONAL EDUCATION STUDY

FINAL REPORT

by

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Prepared for

State of North Carolina
Joint Legislative Commission on
Governmental Operations

The interpretations and opinions presented in this report are solely those of the RTI study team, and no endorsement of the findings and recommendations, in whole or in part, by the Legislative Subcommittee on Vocational Education, the Joint Legislative Commission on Governmental Operations, or any other State Agency should be inferred.

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VOCATIONAL EDUCATION STUDY

Executive Summary

Study Purpose

The North Carolina General Assembly, in recognition of the need for a strong vocational/technical education program in the State, mandated that a comprehensive study be made with the intent of making recommendations for improvement of the program. The Joint Legislative Commission on Governmental Operations contracted with the Research Triangle Institute (RTI) to conduct such a study. The intent of this study was to (a) describe vocational/technical education as it currently exists in the State, (b) identify issues and concerns regarding the optimal operation and organization of vocational/technical education, and (c) draw conclusions and develop recommendations for addressing the identified issues and concerns. Detailed research procedures, descriptive findings, issues and concerns, and conclusions and recommendations are contained in a full report provided to the Joint Legislative Commission in November 1986. This Executive Summary highlights some of the key conclusions of the study, the basis for these conclusions, and the general direction suggested for improving vocational/technical education in the State. Specific recommendations for accomplishing these purposes are detailed in the full report.

Study Findings

The study noted the criticality of vocational education in the Public School System and the existence of overwhelming evidence and virtually unanimous opinion that vocational education must play an essential role within the total system of public school education. The study suggested that there should be an increased emphasis (rather than a decreased role) in the total public school curriculum on preparation of pupils for the world of work. Such conclusions were based, in part, on the data that show that about 75 percent of the public school pupils will enter or attempt to enter vocational employment either upon leaving high school or following additional vocational training in a community college or other less-than-four-year-college institution.

The study also noted widespread indications from employers and employer organizations that many high school graduates do not have the basic knowledge/skills/attitudes essential to success in the workplace. Employers indicated that the ability to learn will be the essential characteristic of the successful employee and that the primary competencies needed both to perform adequately in entry-level jobs and to continue the learning process are proficiency in basic skills (i.e., reading, writing, arithmetic, and reasoning). The study also indicated that labor growth and demand projections point toward a two-tiered labor force with decreased specific occupational education required at the level of greatest demand, and increased specific occupational education required at the level of greatest growth. This argues for a de-emphasis at the high school level of occupational-specific programs and an increased emphasis on basic skills and on the teaching of vocational principles and practices related to clusters of occupations having reasonably similar processes, materials, and/or products. This would instill a range of work-related knowledge/skills/attitudes critical to adaptability, transferability, and upward mobility.

Based on factors such as the above, RTI recommended a restructuring of Public School System education. These recommendations were not intended to represent immediate, drastic change in public school education, but a goal toward which we should plan and work. Major components of the restructuring are summarized as follows:

-- All pupils in grade 7 and 8 would enroll in an "introduction to occupations" program based on exploratory laboratories and an occupational information system.

-- By the beginning of grade 9 or 10, all pupils would declare an educational/occupational goal by selecting one of perhaps seven curriculum content areas (or educational/occupational) clusters each of which would be based upon the educational needs for success in a cluster of reasonably similar occupations (suggested clusters are agribusiness, business and office, home/health care, marketing, trades and industry, services, and scientific/professional). This would be an informed (and perhaps tentative) choice based upon pupil abilities and desires and inputs from teachers, counselors, and parents. This choice of an educational/occupational cluster would provide directionality for all subsequent learning activities consistent with each pupil's emerging educational and occupational capabilities and interests.

-- The curriculum content for each pupil would be oriented toward knowledge/skills/attitudes necessary for job success in the cluster of occupations. This curriculum would include traditional course titles (e.g., English, math, science, social science); however, the content of such courses would become (at the upper grade levels) increasingly differentiated and related to job success in the cluster of occupations.

-- Since a primary requirement for occupational success is proficiency in basic skills, early identification and remediation of pupils deficient in basic skills would be emphasized. While alternative approaches to remediating deficiencies in basic skills might be (and probably would be) in order, every effort would be made to ensure that no other programmatic emphasis diverted time and resources from the task of ensuring that all pupils obtain, to the extent of their abilities, proficiency in basic skills.

-- All occupational education offerings (including English, math, science, etc.) would be oriented toward fundamental knowledges, principles, and practices underlying job performance in the range of occupations comprising a cluster. No attempt would be made to duplicate within the classroom the tools and technologies of specific occupations.

-- Occupational-specific Public School System programs would be de-emphasized; further investments in specialized equipment and facilities would be minimized in favor of investment in personnel development and multi-use facilities suitable for a variety of programs to teach a broad range of basic occupational principles and practices.

-- The secondary school educational/occupational clusters would be directly linked to area community college programs (or, in the scientific/professional cluster, linked to university programs). Pupils who are desirous of (and educationally ready for) obtaining occupational-specific skills would have the opportunity to pursue such training at the local community college or technical institute. Successful completion of these courses would count both as credit for the secondary program and as credit hours earned toward a postsecondary certificate or degree.

-- Teacher preparation programs would be modified so that middle school and high school teachers of subjects directly related to success in the world of work (including teachers of English, mathematics, science, and social studies) would be more proficient in the use of concrete, work-related examples as a means for making the curriculum content more pertinent to pupil needs and interests.

-- Standards for public school vocational education teachers and the related vocational education teacher preparation would be essentially the same as for other public school teachers.

Several issues and concerns were noted related to vocational/technical education in the Community College System. For two of these, the priority given to vocational/technical education and program emphasis/accessibility, the study concluded that:

-- The North Carolina Community College System is dedicated to the provision of vocational/technical education and is unlikely to be diverted from primary emphasis on this essential mission.

-- The program emphasis of, and accessibility to, Community College System vocational/technical education is generally adequate for meeting the needs of students and employers.

However, based in large part on employer perceptions that the quality of some Community College System programs needs to improve, the following conclusions/recommendations were that the System should:

-- Intensify current efforts to examine the adequacy of faculty, instructional equipment, and program content toward identifying instances where the quality of vocational/technical education may be unacceptable or minimal.

-- Where urgent needs for improvement to bring programs up to acceptable quality are found to exist, assess alternatives for improvement other than wholesale increases of general or specific appropriations (e.g., combining resources through counsortia programs with neighboring institutions, discontinuance of high cost programs with inadequate student or employer markets, introduction of state-of-the-art instructional technology).

A conclusion/recommendation related to both the Public School System and the Community College System was that the Systems should:

-- Initiate a joint task force of members of the State Board of Education and the State Board of Community Colleges (with assistance of their departmental staff members, as appropriate) to establish improved cooperation and articulation between the two systems and between local public school and community college boards and educational programs.

Several conclusions/recommendations related to JTPA programs were:

-- The current and planned State initiatives by the North Carolina Job Training Coordinating Council, the State Advisory Council on Vocational Education, and other State agencies toward clarifying and coordinating the various agency JTPA activities are justified and appropriate for addressing organizational issues as they relate to JTPA programs.

-- The current labor market information system has a number of shortcomings that are, at least in part, results of competing and perhaps unclear demands placed on the system. Any real improvement likely must be based upon clarification and prioritization of system needs. The system is not likely to succeed at being all things to all people.

Acknowledgements

The authors take full responsibility for the conclusions and recommendations offered in this report and also acknowledge the freedom given by the Legislative Subcommittee on the Study of Vocational Education (and by the State Coordinator for the study) to make these conclusions and recommendations. We appreciate the cooperation and contributions of the more than 130 individuals (listed in Appendix C of this report) who made direct contributions by providing most of the information reported in the study. We particularly express our appreciation for those personnel in the Public School System and Community College System who, while not always agreeing with our ideas, were most supportive of our efforts toward improving vocational/technical education in North Carolina.

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Vocational Education Study

I. BACKGROUND AND OBJECTIVES OF STUDY

The context of vocational/technical education in North Carolina is being altered by changes in the factors that traditionally have shaped it. The extent to which the needs presented by these changes are successfully addressed likely will determine the destiny of vocational/technical education for future generations. Since the needs presented by the forces of change also impact upon continuing economic development in North Carolina, successfully meeting the needs also is essential to the well-being of the citizens of the State. The forces that appear most likely to require changes in the scope and process of vocational/technical education in North Carolina are:

-- Changes in industry needs. North Carolina still is in the throes of a massive change from an agrarian to an industrial and service economy. Concern for continuing revitalization of the economy and a growing commitment to the marketplace as the mechanism for resource allocations are shifting the mission of human service programs to economic development. Programs increasingly are being judged according to the extent to which they contribute to the improvement of the economic conditions of the State. Priority likely will continue to be given to publicly supported programs that contribute to productivity improvement, expansion of existing businesses, development of new businesses, creation and retention of jobs, and the reduction of unemployment. The economic growth and changes in the industry mix in the State have created new problems and opportunities for vocational/technical education. Problems include those of addressing (a) the changing employer needs in the current "information" age, (b) employer needs for both high skill and low skill work forces, and (c) employer needs for retraining large portions of the current work force. These same types of problems also create an exceptional opportunity to assist the industry/business segment in moving North Carolina to the forefront in the current expanding economy.

-- Changes in citizen needs. Changing demographics in North Carolina are having an increasing impact on vocational/technical education needs. The adult boom of the 80's coupled with a decreasing number of youth will require a shifting of emphasis and resources to meet the needs of adults. Many of the skills lost through attrition of older workers from the work force will need to be replaced. The needs of special populations disenfranchised from participating in the larger society must continue to be met; however, the conditions of change increasingly will require that their needs be met through the same mechanisms that benefit other segments of society. Among the special populations are those whose educational attainment no longer is sufficient for success in any but the lowest-paying segments of the work force.

-- Changes in the educational delivery system. Major shifts in emphasis in public education in North Carolina have both lessened and exacerbated the problems of addressing the changing vocational/technical education needs in the State. While attempts to expedite educational reform undoubtedly have and will continue to help upgrade the general education level of North Carolina citizens, such reforms often work at cross purposes with the aims of vocational/technical education. Such factors as increased public school graduation requirements, differential weighting of course credits, and increased competency testing programs, while clearly addressing worthwhile objectives, likely have worked to the disadvantage of attempts by some segments of the population to obtain specific occupation-related skills. Vocational/ technical education also is feeling the impact of a receding federal presence that is leaving the state with the major responsibility for human resource development. Block grant funding is providing increased flexibility and freedom in the allocation of resources. Elimination of funding categories, however, is placing new responsibilities on the State to establish the priorities necessary for making rational allocations of resources among competing programs. Meeting this responsibility will require less of a compliance orientation and more of an innovation orientation, less reliance on past patterns of program prerogative and more reliance on prioritizing of needs and assignment of responsibility based upon those prioritized needs. Accountability will become more personalized as responsibility for the welfare of the citizens shifts from the federal to the State level.

-- Changes in funding patterns. The prevailing mood of fiscal austerity is evidenced in the reductions in federal spending for social programs approved by the Congress over the past five years. An increasing federal debt is one indication that this trend will not soon be revised. The Carl Perkins Vocational Education Act of 1984 made major changes in how federal funding for vocational education may be allocated and used; the emphasis now is more upon services to targeted populations and less upon maintenance of existing programs. The message from Washington is clear. Expansion of state responsibilities will be accompanied by the systematic withdrawal of federal dollars and, in many cases, increased restrictions on how those dollars may be utilized. Improvement of the economic and social well-being of the citizens of North Carolina through appropriate vocational/technical education will require increased efficiency in the organization and operation of such services. Overlapping services, duplication of effort, and competition for clients must be eliminated.

The challenges for public-supported vocational/technical education in North Carolina are clear. Economic growth and development will require a qualified work force. New technologies will require corresponding obtainment of new knowledge and skill. Technological changes will require updating of existing knowledge and skills to avoid work force obsolescence. Jurisdictional disputes among education and training providers will have to be resolved and responsibilities assigned according to established priorities and in a manner that capitalizes on the strengths of particular agencies and institutions. Limitations of resources will necessitate prioritization of goals and resources and the corresponding allocation of responsibilities. Traditional course offerings will have to be assessed to determine the extent to which they respond to labor market needs. The ability of all groups to profit from vocational/technical education must be assessed and no group should be disenfranchised by systematic exclusion. Block grants will provide increased flexibility regarding use of funds, but this funding strategy will place responsibility on the State vocational/technical education system to make difficult but critical programmatic and management decisions. Crucial decisions will have to be made concerning what activities and services will be provided:

-- To whom?
-- At what level of regional and local coverage?
-- By whom (by which agencies and institutions)?
-- Through what types of program strategies or delivery systems?

The well-being of the citizens of North Carolina and the continued industrial/business expansion in the State depends in large part on equitable, effective answers to such questions.

In recognition of (a) the importance of vocational/technical education to the well-being of the citizens of North Carolina and (b) the impact of such factors as those noted above on the context of vocational/technical education in the State, the General Assembly of 1985 determined that a comprehensive study of vocational education was needed. (See Appendix A for the content of the legislative mandate.) The Joint Legislative Commission on Governmental Operations contracted with the Research Triangle Institute (RTI) to conduct such a study. This report presents a summary of the RTI study activities, conclusions, and recommendations.

The intent of the RTI study was to (a) review the current status of vocational/technical education in the State, (b) identify critical issues or concerns thought to impact upon the quality and effectiveness of vocational/technical education, and (c) draw conclusions and make recommendations for the improvement of vocational/technical education. The specific objectives of the study were as follows:

(a) Determine the current status, including quality and effectiveness, of vocational/technical education (including JTPA[1]) in North Carolina. This includes the status of:
    -- Instruction in vocational/technical education.
    -- Governance structures in vocational/technical education.
    -- Funding mechanisms for vocational/technical education.

1/ Job Training Partnership Act

-- Articulation of vocational/technical education.

-- Vocational/technical teacher preparation.

(b) By means of a review of current studies and issue papers, including reports of exemplary practices in other states, identify key findings that are relevant to vocational/technical education (both current and future) in North Carolina.

(c) Develop policy recommendations for the improvement of vocational/technical education (including JTPA) in North Carolina at the secondary, postsecondary, and university levels.

The balance of this report provides details of the study methodology (Section II), descriptive findings (Section III), indicated issues and concerns (Section IV), and conclusions and recommendations (Section V).

II. STUDY METHODOLOGY

The study methodology to meet the objectives listed above was restricted somewhat by time and resource constraints. The short time frame (six months) allocated for the study and limitations in funding available to support the study placed severe limits on the nature and extent of data collection and analysis. These constraints dictated heavy reliance upon extant state-level data/information and other available studies related to vocational/technical education. Fortunately, several positive factors served partially to offset these constraints. The major of these were:

- A large number of studies of various aspects of vocational/technical education in North Carolina have been conducted in recent years. While these studies generally did not address concerns about the total vocational/technical education system in the State, they did provide a wealth of information regarding the parts that make up the system.
- Reasonably current descriptive information regarding vocational/technical educational activities was readily available from most of the State agencies having statutory responsibility for vocational/technical education.
- The RTI project staff members have participated in a number of studies of vocational technical education in North Carolina and nationally. Thus, the staff members already were reasonably knowledgeable regarding national trends, State and local responsibilities/activities, and the issues of interest as they impact upon vocational/technical education.

The general study methodology, then, was one of (a) using extant data/information and personal interviews of key officials and staff to describe vocational/technical education as it currently exists in the State, (b) reviewing other relevant studies and position papers, personnel interview inputs, and project staff inputs to identify issues and concerns applicable to the existing program structure and activities, and (c) using the data/information sources and staff experience/expertise to develop recommendations for addressing the identified issues and concerns. Following is a summary description of each of the major tasks undertaken to support this general study methodology.

A. Review Current Studies/Issue Papers and Program Descriptive Documents

An initial study activity was to review various position papers provided by the Joint Commission on Governmental Operations. These papers dealt with a variety of issues and concerns thought to relate to vocational/technical education in the State and nation. This review activity was expanded to include additional studies, issue papers, and descriptive information (1) provided or suggested by interviewed personnel (see Task 2 below) or project staff (including consultants) or (2) identified through a computer-based literature search.

Each of the collected studies/papers were reviewed by a number of the RTI professional staff and the results summarized for further analysis. This initial review consisted of identifying (1) findings pertinent to describing the current vocational/technical education system in North Carolina, (2) indicators of issues or concerns within the existing system, and (3) implications for change in vocational/technical education in North Carolina. Particular attention was given to indicators of quality and effectiveness of the specific areas of concern noted in the study objectives; i.e.:

- Instruction in vocational/technical education.
- Governance structures in vocational/technical education.
- Funding mechanisms for vocational/technical education.
- Articulation of vocational/technical education.
- Vocational/technical teacher preparation.

While particular attention was given to vocational/technical education in North Carolina, consideration also was given to national perspectives and to noteworthy approaches used by other states that appeared to have implications for improvement in program structure or service in North Carolina.

All reviewed studies/papers/reports that provided a basis for the descriptions/findings/recommendations in this report are appropriately referenced herein. A bibliography of major reviewed documents is included as Appendix B.

B. Interview Cognizant Agency/Institutional Personnel

The second major method of obtaining data/information to address the study objectives was to conduct interviews with cognizant agency and institutional personnel. RTI staff members interviewed more than 130 individuals representing various parts of the vocational/technical education delivery system (including providers of data/information to support the delivery system). The names and titles of the interviewed personnel are provided as Appendix C. While some of these interviews were conducted by telephone because of travel distance or for interviewee convenience, the large majority were face-to-face interviews. The interviews also varied regarding the nature and extent of requested information; this ranged from requests for specific information to in-depth interviews touching on all or most aspects of vocational/technical education.

The primary objective of the personal interviews was to supplement the written reports (referred to in the previous task description) by providing additional data/information to describe the current vocational/technical education system, indicate issues and concerns, and suggest possible corrective actions. In addition, key personnel were (as discussed in subsequent task descriptions) asked to respond to evolving conclusions and recommendations by providing impressions of feasibility and impact.

Of note is that information obtained through personal interviews conducted specifically as a part of this study was augmented by a wealth of survey and interview information collected by the RTI project staff as a part of other closely related studies over the past several years. In particular, information regarding "user" perspectives was available based on employer surveys, employer interviews, student surveys, parent interviews, and classroom observations. Reports reflecting these studies are included in the bibliography in Appendix B.

C. Analyze and Report Descriptive Data/Information

Based upon the data/information from the reviews of current studies and issue papers and the interviews with agency and institutional personnel, a description was developed of the current vocational/technical education system in the State. This descriptive information was organized around the major themes indicated in the study objectives; that is, organized to describe instructional services, governance structures, funding mechanisms, articulation, and teacher preparation.

In an attempt to ensure accuracy of the descriptive information, draft copies were forwarded to cognizant agency personnel for review and validation. The results of the task are overviewed in Section III of this report and described in detail in Appendices D through H.

D. Determine Major Issues and Concerns

The data/information from the current studies and issue papers and the interviews with agency and institutional personnel also were reviewed to identify major issues and concerns. The initial list of several hundred issue/concern statements was reduced by (1) grouping like items into single items (2) deleting items that appeared to reflect suggestions for change without clarifying the reasons why the change was needed, and (3) deleting items where the presented evidence did not appear to substantiate the existence of a significant need for change. Since most of the resulting issue/concern statements involved more than one of the major themes indicated in the study objectives (i.e., instructional services, governance structures, funding mechanisms, articulation, and teacher preparation), and because of the significant interrelationships between the themes, no attempt was made to identify issues/concerns with specific themes (except for teacher preparation). However, care was taken to ensure that all of the themes were addressed. Since our intention was to use the issue/ concerns as a basis for agency specific recommendations, the issue/concerns were grouped according to agency or institutional responsibility. The resultant listing of issues/concerns and arguments to support various positions regarding each issue/concern are included as Section IV of this report.

E. Develop Conclusions and Recommendations

The descriptive findings overviewed in Section III and the indicated issues and concerns discussed in Section IV were further analyzed as a basis for drawing conclusions that had implications for change. General and specific recommendations then were developed to address the needs for change indicated by these conclusions. The conclusions and recommendations are detailed in Section V of this report.

III. DESCRIPTIVE FINDINGS

An initial task in re-evaluating the goals and objectives of vocational/technical education (including JTPA) in North Carolina was to conduct a status review of the nature and extent of vocational and technical education services, state-level governance, funding mechanisms, articulation, and teacher preparation. This section provides a brief overview of the current status of vocational/technical education as it relates to each of these topics. A detailed description of the current status of vocational/technical education in the state is provided as Appendices D through H.

A. Nature and Extent of Vocational/Technical Education Services

Eight state agencies and two state councils were identified as having statutory responsibilities for the provision of vocational/technical education (including JTPA) in North Carolina. These agencies and councils, along with their major area of responsibility for vocational/technical education, are as follows:

-- Department of Public Instruction (and local education agencies):	vocational education (grades 7-12)
-- Department of Community Colleges (and local community colleges and technical institutes):	vocational and technical education for adults
-- The University of North Carolina System:	teacher preparation
-- Department of Commerce:	JTPA programs and labor market information
-- Department of Corrections:	coordination of vocational/ technical education for adults
-- Department of Labor:	apprenticeship training programs
-- Department of Human Resources:	support services
-- Department of Natural Resources and Community Development:	administration of JTPA programs

-- State Advisory Council on Vocational Education: advising, consulting, and reporting

-- North Carolina State Job Training Coordinating Council: reviewing and advising regarding JTPA programs

Vocational/technical education also is provided by the 28 proprietary schools (17 business schools, 10 trade schools, and 1 correspondence school) licensed by the State Board of Education. In addition, virtually every State agency is involved in vocational/technical education as it applies to their own or related agency/organization personnel.

The larger numbers of clientele are served by the Public School System (with an approximate 1985-86 unduplicated enrollment of 331,000 in vocational education) and by the Community College System (with an approximate 1985-86 enrollment of 177,000 in vocational/technical education and 231,000 in continuing education, occupational extension).

See Appendix D for more detailed related information.

B. Governance Structure of Vocational/Technical Education

The State Board of Education, which serves as the governing authority for the Department of Public Education, is designated by North Carolina state law as the State Board of Vocational Education and as "the sole agency for the State administration of vocational education at all levels" with "all necessary authority to cooperate with any and all federal agencies in the administration of national acts assisting vocational education, to administer any legislation pursuant thereto enacted by the General Assembly of North Carolina, and to cooperate with local boards of education in providing vocational and technical education programs, services, and activities for youth and adults residing in the areas under their jurisdiction."

The State Board of Community Colleges is the governing authority for the Department of Community Colleges. The State President of the Community College System is elected by the State Board and serves as the administrative head of the department. North Carolina state law mandates that the State Board of Community Colleges "shall have authority to adopt and administer all policies, regulations, and standards which it may deem necessary for the operation of the Department" of Community Colleges. The General Statues of North Carolina also provide that each of the 58 community college institutions shall be governed also by a board of trustees. The duties and authority of these boards are described in the General Statues.

The remaining agencies with statutory responsibility for vocational/ technical education are principal state government administrative departments headed by either an elected or an appointed official. The Commissioner of Labor is an elected official; the balance of the administrative heads are appointed by the Governor and serve at his pleasure. These administrative heads have "such powers and duties" as are conferred by the constitution and laws of the State and/or delegated to them by the Governor. The duties of their departments, which are also set by the constitution and laws of the State, are exercised and discharged under the supervision and direction of these administrative heads.

The University of North Carolina System receives funding from the State of North Carolina but operates as an autonomous system governed by a Board of Governors.

See Appendix E for additional information including the specific statutory authority for various agencies and programs within agencies.

C. Funding Mechanisms for Vocational/Technical Education

Vocational/technical education (including JTPA) in North Carolina is primarily funded by federal, State, and local government. Federal vocational education dollars flow to the State Board of Vocational Education (which is also the State Board of Education) and are distributed between the Public School System and the Community College System in accordance with an agreement between the State Board of Education and the State Board of Community Colleges. Federal guidelines describe how federal funds, and required matching funds in some cases, may be used.

State funding for vocational/technical education for both the Public School System and the Community College System is based primarily on a student class membership count. In the case of the Public School System, this count is the ADM (average daily membership). For the Public School System, it is FTE (full-time equivalent student).

Local public school systems and local community colleges and technical institutes also receive support through funding mechanisms of local governments.

Funding for the University of North Carolina System differs in that (1) there is no systematic funding mechanism for local support; except for federal grants and tuition and fees, university institutions are supported by the State, and (2) state-funding is not formula driven based on a measure of student membership in classes; instead, funding is sought for the total institution.

The majority of federal funds from the Job Training Partnership Act go to Service Delivery Areas (SDAs) located throughout the state. A smaller portion of the funds flow from the Governor to state agencies for designated state-level projects. SDAs may elect to provide training services themselves or to contract for such services with local public school systems, community colleges or technical institutes, State government agencies, or private sector providers. State agencies receiving state set-aside funds also may provide training services themselves or contract with other government or private sector agencies for provision of services.

The Department of Human Resources funds programs through federal and State dollars that support client participation in vocational/technical education (e.g., the Division of Vocational Rehabilitation funds transportation for clients to attend classes). Additionally, State funding for the Department of Human Resources totally supports the vocational/technical education and training provided for youthful offenders.

The Employment Security Commission receives the major portion of federal and State funding for vocational/technical education and training that flows to the Department of Commerce. Vocational/technical education and training services provided by the Employment Security Commission are federally funded primarily through the Wagner-Peyser Act. Additionally the Employment Security Commission is a major administrator of JTPA and Work Incentive Programs. In some cases, local public school systems and local community colleges and technical institutes may be contracted by the Employment Security Commission to provide services under JTPA.

The primary funding source for services provided by the Department of Labor to support the apprenticeship program is a state appropriation.

Participating employers pay the salaries of the apprentices. The pre-apprenticeship program in this department is funded by JTPA and participating employers.

The Department of Correction receives appropriations from the General Assembly of North Carolina to support Pre-Release Training and Vocational Education. Local community colleges and technical institutes provide approximately 95 percent of the instructors for vocational education courses within the Department of Correction. Students enrolled in these classes generate FTEs for the specific community colleges or technical institutes supplying the instructors. The Department of Correction provides facilities and some equipment. The local community colleges and technical institutes provide the balance of the equipment. For some vocational education courses, the Department of Correction funds the instructors, facilities, and equipment. The Department of Correction indirectly receives a small amount of funding from the Carl D. Perkins Vocational Education Act through the Department of Community Colleges.

These funding mechanisms are described in greater detail in Appendix F.

D. Articulation of Vocational/Technical Education

Articulation (cooperation) of vocational education (including JTPA) among and between agencies is driven by requirements of federal and State laws. The public school laws of North Carolina require the State Board of Education (acting as the State Board of Vocational Education) to prepare and periodically update a Master Plan for Vocational Education. The resulting plan for fiscal years 1986-1988 included the establishment of the "State Vocational Education Planning and Coordination Committee" to expedite the planning and coordination requirements of the Carl D. Perkins Vocational Education Act.

The Job Training Partnership Act provides that the North Carolina State Job Training Coordination Council shall "plan, coordinate, and monitor the provision of (JTPA) programs and services." Because several State and local agencies provide JTPA-funded programs and services, the Council has coordinating responsibilities that involve these agencies. In 1984, this Council created the Interagency Coordinating Committee, whose purpose is "to identify barriers to coordination among employment and training-related agencies and to propose workable solutions to those problems."

As required by the Job Training Partnership Act, the Governor's Coordination and Special Services Plan (for JTPA) contains coordination criteria "to provide direction to Service Delivery Areas and to those State and local agencies determined to have a direct interest in employment and training and human resource utilization."

Federal and state laws also address articulation of vocational education between specific agencies. The Huskins Bill (House Bill 1044) permits the establishment of cooperative programs between local community college institutions and local school boards for the purpose of providing college courses (and college credit) for qualified high school students. Additionally, North Carolina Administrative Code (2E.0500) lists the purposes for which articulation programs between community college institutions and secondary schools shall be designed.

The cooperation of vocational education in both the Community College System and secondary school programs with JTPA operates at the State and local levels. At the State level, both educational agencies receive funding from the JTPA Title II-A 8 percent setasides. At the local level, agencies in both educational systems contract with local SDAs to receive funding from the 78 percent SDA allocation.

See Appendix G for additional related information.

E. Vocational/Technical Teacher Preparation

Forty-four postsecondary education institutions in the State offer approved teacher education programs. Twenty-one of these (10 private and 11 public institutions) are engaged in preparation of vocational education teachers. While teachers for most teaching fields are educated in schools or departments of education, vocational education teachers are educated primarily in schools/departments other than education. Certification requirements for public school vocational education teachers also are different (and somewhat less dependent on academic credentials) than are requirements for other public school teachers.

While the flexible certification requirements and the range of higher education departments engaged in preparing vocational/technical education teachers contribute to difficulty in maintaining highly-reliable supply/demand data, current indications suggest a reasonable over-all balance between supply and demand.

See Appendix H for additional related information.

IV. INDICATED ISSUES AND CONCERNS

This section summarizes the major issues and concerns indicated by the review of current studies and available data and interviews with cognizant personnel. As noted earlier in this report, since most of the identified issues and concerns involve more than one of the major themes indicated in the study objectives (i.e., instructional services, governance structures, funding mechanisms, articulation, and teacher preparation), and because of the significant interrelationships between the themes, no attempt was made to relate specific issues/concerns to specific themes (except for teacher preparation). However, care has been taken to ensure that all of the themes were considered and addressed to the extent that related issues/concerns emerged during the study information collection activities. Since our intention was to use the issues/concerns as a basis for agency-specific recommendations, the issues/concerns are grouped according to agency or institutional responsibility; that is, as follows: those that apply primarily to the Public School System (Subsection A), those that apply primarily to the Community College System (Subsection B), those that apply primarily to JTPA programs (Subsection C), and those that apply primarily to teacher preparation (Subsection D).

There are two reasons for listing these issues and concerns. First, we wished to emphasize the existence of evidence in support of the several major positions regarding the mission and methods of vocational/technical education and to emphasize that there are no sets of data, consensus of opinions, or rational arguments that lead inevitably to a specific set of conclusions and recommendations. Thus, any conclusions and recommendations must be based upon the assumed weight of the evidence and logic of the arguments. Second, we wished to clarify the basis for our conclusions and recommendations; we wished to (a) avoid attempting to resolve problems where no problems are indicated and (b) focus our recommendations on addressing real issues and concerns. This section of the report, then, is intended to provide a basis for the conclusions and recommendations provided later in Section V.

The following discussions of issues and concerns include discussions of the major positions reflected in the reviewed information/data. The basis for each listed issue and concern is identified by stating the general category of interviewed personnel who identified the issue/concern or point of view and by references to the applicable studies and reports.

A. Issues and Concerns Related Primarily to the Public School System

Following are the major identified issues/concerns that apply primarily to the Public School System (Department of Public Instruction and local school systems). Each issue/concern is listed as a question followed by a brief discussion of the major positions taken in response to the question.

Of note is that the question of whether or not there is a need for vocational education in the Public School System of North Carolina has not been raised as an issue of concern. This is because there appears to be overwhelming evidence and virtually unanimous opinion that vocational education must play an essential role within the total system of public school education. In fact, there are strong indications that there should be an increased emphasis (rather than a decreased role) in the total public school curriculum on preparation of pupils for the world of work. The arguments are not "whether or not vocational education" but, rather, are related to the nature of the mission and methods of vocational education within the total system. Additionally, there appears to be little if any argument with the general purposes of vocational education in North Carolina public secondary schools as stated in Article 10 of the Public School Law of North Carolina. These purposes are as follows:

(1) Vocational Skill Development.
To prepare individuals for paid or unpaid employment in recognized occupations, new occupations, and emerging occupations.

(2) Preparing for Advanced Education.
To prepare individuals for participation in advanced or highly skilled vocational and technical education.

(3) Pre-Vocational; Introductory.
To assist individuals in the making of informed and meaningful occupational choices.

However, as is summarized in the balance of this subsection, there is considerable disagreement regarding the appropriate interpretation of the above purposes and regarding how these purposes may best be accomplished.

(1) Are vocational education services in the Public School System adequately meeting the vocational education needs of pupils and employers?

There were widespread indications from employers and employer organizations that many high school graduates do not have the basic knowledge/skills/attitudes essential to success in the workplace.[2] Employers indicated that the major requirement of high school graduates for continuing success in the workplace is the ability to adapt to change. The continual evolution of work functions will require that workers master new skills throughout their lives. The ability to learn will be the essential characteristic of the successful employee. Employers indicated that the primary competencies needed both to perform adequately in entry-level jobs and to continue the learning process were those that we expect all high school graduates to have; e.g., proficiency in reading, writing, arithmetic, and reasoning. One source [3] listed the following as the primary competencies needed for job success:

- -- Command of the English language
- -- Ability to read
- -- Ability to write
- -- Oral communications skills
- -- Computational skills
- -- Knowledge of science and technology
- -- Knowledge of social and economic studies
- -- Reasoning and problem-solving skills
- -- Interpersonal relationships skills
- -- Good personal work habits and attitudes

Employers indicate that acquiring knowledge and skills related to specific occupational categories can enhance a students' employability but cannot substitute for proficiency in reading, writing, arithmetic, and reasoning.

To summarize the above, the vast majority of employer criticisms of vocational education in the public school system appeared to relate more to the school system in its entirety than to the specific vocational offerings. The employers apparently tended to blame vocational education for the perceived

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2/ See Bibliography Items 39, 72, 105, 108, 122, 130, 184, 193, 206.

3/ See Bibliography Item 130.

shortcomings of graduates based on employers' perceptions that most of the low academic achievers were the products of vocational education programs.

Another supposed indicator of the inadequacy of vocational education was the argument that general or academic public school education is as successful in contributing to job success (following high school completion) as is vocational education, even though the costs for vocational education often are higher. [4] Except for pupils from office occupation programs, there is little research evidence that vocational students have any better employment rates or higher wages than have students in general education programs. Also, while one of the major objectives of vocational education in the public schools is to prepare students for advanced post-secondary vocational/technical education, post-secondary school personnel indicated that high-school graduates often do not have the basic academic skills necessary for success in their programs.

Many Public School System vocational education personnel stated that pupils in vocational programs (particularly trades and industry programs) often are deficient in basic academic skills preparation. While some personnel indicated that basic skills are being taught in the vocational education classes, others stated that this is not the mission of vocational education. In the latter cases, vocation/education appeared, at least in part, to diminish the opportunity for pupils to gain basic skills proficiency.

In response to criticisms such as the above, many vocational education personnel and current studies and reports[5] stated that any purported lack of basic skills on the part of high school graduates (including graduates who were enrolled in vocational programs) is not an indication of inadequacy of vocational education since vocational education has neither the mission nor the personnel for teaching basic skills.

In addition, advocates for the adequacy of vocational education noted that the 1986 follow-up of completers of North Carolina public school vocational education programs[6] indicated that 34 percent of the completers were employed (either full-time or part-time) in work closely related to their vocational program. Additionally, these completers reported a high level of satisfaction

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4/ See Bibliography Items 72, 93, 98, 126, 184, 215.

5/ See Bibliography Items 14, 169, 189.

with their vocational education experience and 44 percent of them reported vocational education as being a "main reason for staying in school." In the 1985 follow-up of employers of vocational/education completers,[7] employers gave an overall (or average) rating of "good" to the completers of public school vocational programs whom they had hired.

An additional critical aspect of the issue/concern related to the adequacy of vocational education in the Public School System has to do with the relative emphasis on vocational education as opposed to "academic" education. Only approximately one-third of the high-school graduates in North Carolina intend to enroll in senior institutions of higher education.[8] Approximately 31 percent[9] of the pupils drop out of school before completing grade 12. Together, these two figures indicate that less than 25 percent of the total public school pupil population entering the seventh grade was likely eventually to enroll in a 4-year college or university. Most of the remaining 75 percent presumably will attempt to enter the job market, either with no additional education or with additional (but less than 4-year college or university) education. This high proportion of pupils for whom public school education represents all or the major portion of their preparation for the world of work would appear to have profound implications for the nature of education in the public schools.

(2) Is the current relationship, in the public school system, between vocational education and "academic" education appropriate for meeting the needs of the pupils?

A great deal has been said by interviewed personnel and in a number of recent reports[10] about the need for vocational education to be "an integral part of the educational process." A statement to this effect also is included as part of the definition of vocational education in Article 10 of the Public School Laws of North Carolina. Unfortunately, little has been said about what

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6/ See Bibliography Items 54.

7/ See Bibliography Item 54.

8/ See Bibliography Item 135.

9/ See Bibliography Item 135.

10/ See Bibliography Items 2, 4, 14, 18, 28, 39, 42, 49, 71, 72, 74, 85, 99, 102, 108, 109, 130, 134, 148, 177, 186, 195, 196, 201, 211, 212.

this really means or how it might be accomplished. Opinions appear to range from one of advocating the complete merger of vocational education with "academic" education to one that takes the position that being an integral part means being "separate but equal." Advocates at one extreme appear to consider that since a major mission of the total education system should be to help prepare pupils for success in the world of work, no separate, distinctly occupation-oriented courses of study are necessary. At the other extreme are those who indicate that since "academic" courses typically emphasize the acquisition of isolated facts and theories, a separate vocational education curriculum is essential to integrating those isolated facts and theories and applying them to practical situations.

The North Carolina Department of Public Instruction (DPI) appears to take a more intermediate position than either of the above. DPI notes in the Basic Education Programs for North Carolina Schools that "one of the principles (incorporated into the North Carolina Standard Course of Study and the North Carolina Competency-Based Curriculum) is the importance of integrating the curriculum--of emphasizing the understanding of concepts and processes over the mere acquisition of isolated facts." The North Carolina Standard Course of Study also notes that "the ultimate task of integrating the curriculum must be performed by the classroom teacher through preparation for instruction and presentation of content." Thus, the actual details of integration appear to be left with the classroom teachers who may be ill-prepared to relate the academic subjects to the world of work.

Actual practices in North Carolina public schools appear to range from one of close coordination of "academic" courses with vocational programs to one of relative isolation of vocational education from the balance of the educational system. In the former situations, education in the local public school systems appears at least to be moving in the direction of a condition where work-related education is a major emphasis that pervades the total public school education system. In the latter situations, vocational education appears to be a separate and unequal appendage to the main thrust of the educational system.

(3) Should the role of vocational education in the public school system include the teaching of the basic skills?

The term "basic skills" as broadly used in studies related to educational attainment and occupational requirements, unfortunately, means different things to different people. As used in Subsection IV. A.1 of this report to indicate primarily competencies that employers considered essential to successful employment, "basic skills" were generally identified as proficiency in reading, writing, arithmetic, and reasoning. These competencies appear to be a subset of those defined in the North Carolina Public Schools Basic Education Program that describes basic education as including the arts, communications skills, media and computer skills, second languages, healthful living, mathematics, science, social studies, and vocational education. The Basic Education Program also provides some "minimum competency" guidelines related to language arts and mathematics. The suggested minimum competency at the eighth grade level, for example, is generally defined based upon an achieved reading proficiency at the 6.6 grade level. Since no precise applicable definitions of "basic skills" appear to be available, the following quite broad (and admittedly inadequate) definition is used for purposes of this report. Basic skills are defined as the ability to accomplish the following at the proficiency level generally required for (a) employment in occupations requiring no more than a high school education and (b) success in further post secondary vocational/technical education, without the need for remedial education.

- Read
- Write
- Communicate orally
- Compute
- Use knowledge of science and technology[11]

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[11] This may be further defined (as noted in the North Carolina Standard Course of Study) as being proficient in using science process skills: observing, predicting, interpreting data, classifying, controlling variables, inferring, formulating hypotheses, experimenting, measuring, formulating models, communicating, using numbers, defining operations, and using space/time relationships.

-- Use knowledge of social and economic studies[12]

Based on the above loose definition of basic skills, vocational education personnel have estimated the proportion of pupils enrolled in vocational programs who lack acceptable proficiency in basic skills to range from about 50 percent to 75 percent. (Some personnel qualified their estimates as applying primarily to trades and industry education, home economics education, and agriculture education.)

Other indicators of low levels of academic achievement across all pupils are numerous. For example:

-- North Carolina ranks 48th in the nation in the percentage of the workforce with a high school diploma.[13]

-- Over 1.5 million adults in North Carolina lack a high school diploma,and over 830,000 lack even an eighth grade education.[14]

-- Of all students currently enrolled in the seventh grade, 31 percent will drop out of school prior to completing the 12th grade, if current trends continue.[15]

-- North Carolina ranked 49th in high school senior scores on both the verbal and math portions of the SAT.[16]

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[12] This may be further defined (as noted in the North Carolina Standard Course of Study) as the ability to identify, define, and state problems; formulate hypotheses; plan appropriate methods for testing stated hypotheses; locate, organize, and interpret information; assess the appropriateness and limitations of data and sources of data; evaluate the accuracy of hypotheses based on data; report findings; draw valid conclusions; manage interpersonal and intergroup relations; and participate in effective listening, group discussion and planning, group decision-making, and accept responsibility for such decisions.

[13] See Bibliography Item 76.

[14] See Bibliography Item 76.

[15] See Bibliography Item 133.

[16] See Bibliography Item 209.

Advocates of making the teaching of basic skills one of the major missions of vocational education[17] base their case primarily on two points. First, since the major work-related need of a great number of vocational education pupils is proficiency in basic skills, this is where the emphasis should be placed to the extent that, and for as long as, the need exists. Second, if the high school pupil has thus far failed to gain proficiency in basic skills, he/she is not likely to do so by using the same learning approaches that have been used in grades K through 9; a new approach is needed and work-related, applied-learning, hands-on activities common to vocational education may represent such an approach.

One recent report[18] addressed the above by noting that the raising of high school graduation requirements in most of the states is a step forward; we need more math, more science, and certainly more English. However, this does not mean that we need the same math, science, and English courses for everyone. There are some pupils who will never get anything out of Shakespeare, and some for whom algebraic concepts and Greek letters on a blackboard will never make any sense. The report then suggests that with an approach more oriented toward vocational education, such pupils might learn English and communication by writing business letters and learn some math by figuring out how much materials would be needed for a building project.

On the other hand, those who oppose teaching basic skills in vocational education classes note what they consider to be the fallacy of using vocational education to attempt to make successes out of others' failures or, as noted earlier, contend that vocational education has neither the mission nor the trained personnel for teaching basic skills.

17/ See Bibliography Items 2, 5, 14, 39, 43, 49, 72, 89, 102, 105, 107, 108, 113, 114, 117, 119, 122, 124, 130, 134, 181, 184, 186, 195, 196, 201, 206, 208, 212.

18/ See Bibliography Item 24.

(4) Should vocational education in grades 10-12 focus on teaching knowledge/skills/attitudes applicable to clusters of occupational categories (as opposed to focusing on specific occupational categories)?

A number of studies[19] indicated continuing shifts in occupational demand. Projections for the year 2000 indicate high growth in occupations that will require specialized education beyond high school. (These high growth areas include such occupations as data processing machine mechanics, paralegals, computer operators, and office machine service technicians.) However, high demand is projected in occupations that tend to have low skill requirements, to be non-technical, and to place considerable emphasis on communications and interpersonal skills rather than on scientific skills. (These high demand areas include such occupations as secretaries, nurses' aides, janitors and sextons, sales clerks, and cashiers.) Thus, a two-tiered labor force may emerge with decreased specific occupational education required at one level and increased specific occupational education required at the other level. Another related projection is that the trend toward a service/information economy likely will result in smaller business organizations than result from our current economy. This small business environment likely will require of employees less specialization but a broader range of knowledge and skills.

Advocates of focusing on clusters of occupational categories argue that all of the above indicate the desirability, in the Public School System, for vocational education to de-emphasize occupational-specific programs (e.g., carpentry, cabinet making, auto body repair, cosmetology, ornamental horticulture, home interiors, clothing services) and to emphasize more broadly-based programs (e.g., materials and processing technology, basic electricity/electronics technology, principles of technology, business data processing, marketing, accounting, business management/ownership).[20] These advocates suggest that teaching the vocational principles and practices

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19/ See Bibliography Items 21, 22, 23, 24, 25, 30, 33, 35, 37, 39, 43, 49, 67, 69, 71, 72, 75, 90, 92, 102, 105, 108, 111, 113, 119, 121, 130, 136, 137, 138, 139, 182, 184, 185, 186, 195, 206, 208, 210.

20/ See Bibliography Items 2, 39, 43, 49, 71, 72, 127, 184, 186, 189, 208, 212.

related to a range of occupations having reasonably similar processes, materials, and/or products will reinforce basic skills development while instilling a broad range of work related knowledge and skills critical to adaptability, transferability, and upward mobility. This emphasis also would support the need for a broader range of skills that would be less likely than specific occupational skills to become obsolete in the face of rapid technological change. Advocates of more broadly-based vocational programs in grades 10-12 also note[21] that our economy in the year 2000 will require better educated individuals and, thus, that efforts to upgrade the entire educational endeavor are steps in the right direction. However, the public schools may be attempting to accomplish too much when they attempt to provide occupational-specific skills. Increasing graduation requirements, increased emphasis on proficiency in basic skills, etc. leaves less time for vocational education. This means that available time must be fully utilized. Advocates of broadly-based vocational programs indicate that there is neither need for nor time for training for specific occupations.

These advocates[22] further note that training for specific occupations in grades 10-12 is unrealistic in view of the vast number of such occupations. (The Dictionary of Occupational Titles lists over 22,000 occupations ranging from Abalone Diver to Zyglo Inspector.) They note also that the costs of teachers, equipment, and facilities for teaching occupational-specific knowledge and skills would be unrealistically expensive and duplicative of community college personnel, equipment, and facilities. They suggest that investment in specialized equipment and facilities be de-emphasized in favor of personnel development and facilities that can be used in a variety of programs to teach a broad range of basic occupational principles and practices.

These advocates also note the widespread availability in North Carolina of occupational-specific vocational/technical education in the Community College System. They indicate that any legitimate needs of such occupational-specific

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21/ See Bibliography Items 30, 43, 49, 87, 111, 121, 211.

22/ See Bibliography Items 39, 43, 106, 130.

education on the part of high school pupils could best be met by the local community college under a dual-credit arrangement.

Advocates of occupational-specific education in grades 10-12 variously indicated the following five reasons for maintaining occupational-specific education:

- Vocational education must teach occupational-specific knowledge and skills if it is to help the completers to secure their first job.
- Many pupils, particularly "at risk" pupils, would not be interested in a more broadly-based vocational education program. The pupils want occupational-specific training.
- Occupational-specific knowledge and skills are readily transferable to other related occupations; thus, there is no need for more generalized vocational education.
- Occupational-specific training by community colleges and technical institutes is not available in many school districts, even if some high school pupils were willing to enroll in such programs.
- Occupational-specific vocational programs are currently functioning well in most school districts; therefore, we should not attempt to change what is working well.

B. Issues and Concerns Related Primarily to the Community College System

The 58 institutions in the North Carolina Community College System, with assigned jurisdiction covering the 100 counties in North Carolina, are major providers of vocational/technical education, with job-related curricula offerings in more than 100[23] vocational/technical areas. Some of these areas duplicate program areas covered by the Public School System (e.g., auto mechanics, cosmetology, secretarial fields, horticulture), some are terminal programs that provide basic components or total training for occupations different from or more advanced than usually offered in the public schools, (e.g. automation/robotics technolocy, dental hygiene), and some constitute the initial phase of professional training to be completed in continuing college level work elsewhere (e.g., pre-architecture, pre-dental, pre-ministerial). Given the cost to the State (over $280,000,000 in 1985-86), the emphasis on

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23/ See Bibliography Item 142.

vocational curricula, and the magnitude of the activity (624,351 students served in 1984-85), the Community College System clearly is a major component of vocational/technical education in North Carolina.

Several issues/concerns relevant to the current study were identified through the present activities and through prior studies.

1. Is vocational/technical education in the Community College System firmly established as the major priority of the System?

In the original enabling legislation in 1963, (Article 10.G.S. 115A), and equally applicable in 1986, the mission of the System is defined as follows:

> The major purpose of each and every institution operating under the provision of this (legislation) shall be and shall continue to be the offering of vocational and technical education and training, and of basic high school level academic education needed in order to profit from vocational and technical education, for students who are high school graduates or who are beyond the compulsory age limit of the public school system and who have left the public schools.

Thus, while students who are legally under the jurisdiction of the public schools are generally excluded,[24] the intent of the General Assembly to provide a resource specifically for vocational/technical education is clear.

However, the Community College System does commit some resources to educational purposes other than vocational/technical education. The most prominent of these purposes is that of providing college-level courses that are not specifically related to vocational/technical education but that may be transfered to a four-year college or university for credit toward a general baccalaureate degree. Also of note in this regard is the interest at some of

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24/ The purpose of the statement excluding students in high school clearly was to avoid jurisdictional problems or conflict with laws concerning public school attendance. The legislation also states, however, in the section specifying authorities of the local community college boards: "Provided, notwithstanding any law or administrative rule to the contrary, local administrative boards and local school boards may establish cooperative programs in the areas they serve to provide for college courses to be offered to qualified high school students with college credits to be awarded to those high school students upon the successful completion of the courses." [G.S. 115D-20(4)] the 32 local institutions now operating as technical institutes to obtain "Community College" status, a move that some apparently feel could detract from the vocational/technical mission.

There is, however, substantial evidence that this does not place in jeopardy the basic vocational/technical mission of the System institutions. First, fewer than half of the 58 institutions are authorized (as "Community Colleges") to provide college transfer work; there is little sentiment in the General Assembly, or support funds likely available, to permit any wholesale conversion of the remaining technical institutes and technical colleges to community college status. Second, the system institutions are specifically forbidden by the North Carolina Administrative Code [Section 2C.0102(c)] from developing into four-year academic institutions. Third, only 5 percent of the headcount enrollment in the system was registered in college transfer programs in 1984-85 (with the increase from the range of 2.9 to 3.5 percent that held for the prior eight years being more a function of a reasonable change in classification of some general education courses than of an increase in numbers of students intending to utilize the courses for credit toward a later baccalaureate degree). Fourth, as noted in a separate recent study of the system,[25] the nine institutions converting in the eleven year period ending in 1979 generally increased their enrollment in technical/vocational programs in the three years following conversion to a greater degree than did the system as a whole over the corresponding periods. This strongly suggests that a major impact of conversion is to strengthen the credibility and acceptance of the institution for vocational/technical education, rather than to divert emphasis therefrom.

Other Community College System educational purposes outside of vocational/technical education are confined largely to basic skills and literacy training and (on a self-supporting basis) avocational interest programs. The former is vocationally supportive, and the latter a matter of personal enrichment (and clearly an adjunct or fringe function).

2. Is the Community College System vocational/technical program emphasis and accessibility adequate for meeting the needs of the students and employers?

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[25] See Bibliography Item 44.

A recent analysis of declining enrollment in certain Community College System vocational/technical education programs[26] provided some evidence of lack of a clear relationship between System vocational/technical offerings and employer training needs. Marketing of existing programs appeared at times to take priority over determination of the needs for current programs or new programs. Also, competition between System institutions for vocational/technical students was noted in some instances. A number of employers interviewed as a part of that study also indicated that class scheduling and location often were based on institutional convenience rather than on employer or trainee convenience.

However, in support of the current program emphasis and accessibility is the following.

The community colleges and technical institutes provide vocational/technical education in over 100 occupational fields[27] that presumably relate to local, regional, or State-wide training needs. Since State funding algorithms make course and program offerings reasonable only if there is sufficient student enrollment, there is little or no institutional incentive for offering courses or programs that lack student support. Plans for new programs are subject to qualitative review by the State Department of Community Colleges and the State Board of Community Colleges, and program standards are established by the appropriate accrediting agencies.

The accessibility of the programs is determined by freedom from barriers to admission (including admission requirements), distance involved for the students in attending, costs to students, and the level of public awareness as to the available opportunities. Admission to the institutions, based on the enabling statute, is open without restrictions to all citizens who are high school graduates or who are beyond the compulsory age limit for high school attendance and who have left the public schools. All areas of the state are covered to the extent that over 95 percent of the population reside within easy commuting distance (or, 25 miles) of a System institution. With the exception of four sparsely populated counties in the Northeastern portion of

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26/ See Bibliography Item 142.

27/ See Bibliography Item 142.

the state, all counties have (or adjoin one or more counties that have) a community college or technical institute. Costs to students have been kept at a minimal level; in-state tuition is currently $4.25 per credit hour or a maximum of $51.00 per quarter for students taking 12 quarter hours or more of work. Fees are limited by System regulation to no more than $30 per quarter. Thus, an in-state student in full-time study may complete a two-year technical program for tuition and fee charges of under $400. Given scholarship availability and class schedules tuned to part-time students who work to support themselves, costs can hardly be viewed as restrictive.

All of the 58 institutions also offer a variety of non-credit, variable length "extension" courses that cover specialized needs for updating skills of employees or for focusing on highly specific occupational components; satellite instructional settings are frequent, as the institutions take training to the workplace or to a neighboring community. The extension offerings also serve to publicize the more formal program opportunities and capabilities of the institutions. The institutions are active in publicizing their programs and attempting to ensure that those with potential interest are aware of opportunities. There is reasonable evidence[28] that the institutions are generally viewed by their communities as offering courses or programs of interest and need.

3. Is the quality of vocational/technical education offered by the Community College System adequate for meeting the training needs?

Clear, empirical evidence related to the quality of the vocational/technical education offered by the community colleges and technical institutes is sparse. For current purposes, the following general evidence is available.

One of the recent studies referred to above[29] provided some evidence of lack of program quality. A number of employers interviewed as a part of that study indicated needs for closer working relationships between the community colleges/technical institutes and employers and employer groups to ensure a match between program content and employer needs. Employers further indicated a need for more "hands-on" educational experiences, up-dated training

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28/ See Bibliography Item 44.

29/ See Bibliography Item 92.

equipment and facilities, and a systematic means for the System to assess often rapidly-changing employer training needs and to responded to these needs in a timely manner. Personnel at visited community colleges and technical institutes noted the strong relationship between student enrollment and teacher quality to be one factor in declining enrollment in certain program areas. Both employers and institutional personnel also noted that the open-entry policy sometimes worked to the detriment of program quality. They suggested that classes often included both "hobbyists" and students studying for occupational entry or advancement, and that lack of clear entry requirements for some programs permitted enrollment of students who lacked the educational background or ability to succeed in the subject area being taught. Thus, the emphasis on keeping the classrooms filled appeared in some instances to work to the detriment of program quality.

The other recent study of the North Carolina Community College System cited in this subsection[30] focused in large part on the reasonableness and adequacy of the funding formula and procedures; a pervasive finding was that the existing programs were operated under considerable budget stringencies. The principal basis for this judgment was the nature and extent of compromises made, under local initiatives, to operate the programs with available funds. These included: minimal faculty salary budgets (with consequent implications for quality of faculty); the frequent need for recourse to part-time faculty who may be acquired at considerably less cost (but whose relationship to the institution and ability to assist in program refinement is limited); frequent postponement of instructional equipment maintenance, updating, and replacement; the necessity, in many program courses, to establish smaller classes than the twenty-two assumed by the allocation formulas to be the reasonable mode; and the inability of some institutions to make reasonable investments in new program development, even where changing economic needs of the communities indicate this to be desirable.

Special concerns also were noted in occupational extension courses[31] Although these represent only random pieces of vocational/technical education,

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30/ See Bibliography Item 44.

31/ See Bibliography Item 44.

they frequently provide for highly specialized needs of business and industry or of individuals seeking brief updating or retraining. As such, these offerings may play a key role in supporting community development efforts. Yet, the funding formulas provide substantially fewer dollars per student contact hour for extension courses than for courses offered in the more formal programs, and thus serve as a disincentive to the provision or expansion of this kind of vocational training. To the extent that this lower level of support is predicated on the fact that extension courses may include a variety of general interest and non-vocational offerings, consideration may be justified for clearly identifying that portion of these offerings that serve urgent vocational and economic development needs and funding them more on a par with other vocational offerings.

Other evidence tends to indicate high program quality. First, as previously noted, the role of quality control by the Department of Community Colleges has been exercised vigorously and local market demands served by the institutions provide real incentives for the maintenance of quality. Second, the accrediting agencies, for the institutional program as a whole and for many of the specialized professional areas (e.g., nursing, medical technology), provide credible evidence of program quality. All of the 58 institutions are fully accredited by the Southern Association of Colleges and Schools (whose standards require self-study, third party inspection and assessment, and conformity to standard curricular components). And third, the agreements or contracts between the individual institutions in the System and four-year institutions provide some indication of program quality. These agreements/contracts permit students to obtain academic credit at the senior institutions for certain vocational/technical courses at the community college or technical institute. Virtually all of the institutions have won such agreements by submitting their programs to the appropriate curricular specialists at the senior institutions, or by the later performance of students who transfer to the four-year institutions. While student demands or program salability frequently have been an initiating factor in these local agreements, their establishment and maintenance relies on the ability of the two-year institution to provide students who can perform acceptably at advanced levels on the basis of the standards of the senior institution.

4. Is there adequate communication, cooperation, and articulation, between the Community College System and the Public School System?

The communality between the Community College System and the Public School System is not one of competing for students; public school compulsory attendance requirements and the preempting of any infringement by the community colleges are statutory. There is, however, some communality of function, with both systems offering vocational education requiring specialized instruction and equipment. There also is some communality at the local levels that results from local control of the two systems. Also, the current legislative requirement that four of the twelve voting members of the local community college or technical institute board be elected by the board of education of the public school administrative unit(s) in the administrative area of the institution would seem to encourage some coordination of common interests between the local institutions.

The State President of the Community Colleges is on record[32] as supporting a "2 by 2" vocational program whereby, a four-year program of vocational education may be developed and implemented that would directly relate public school vocational education to community college/technical institute vocational/technical programs. However, at this time this approach has not seen widespread application.

The highest level for articulation between the two systems--Board to Board--does not appear to have been particularly fruitful regarding coordination of program activities. At the second level of administration and management--Department to Department--there appears, from our interviews, to be a reasonably positive, effective, and continuing working relationship between the chief administrators of vocational education programs. At the local levels, as noted above, the community base and the required presence of members on the local community college boards of trustees that are elected by the local administrative board(s) of the Public School System(s) would seem to assure an effective articulation. Not much in this regard, however, appears to have occurred.

32/ See Bibliography Item 213.

The major factor seen as operating against cooperation and articulation, particularly at the local level, is the perception of overlapping responsibility for occupational-specific vocational education (e.g., in areas such as auto repair, carpentry, cosmetology). As noted earlier in this subsection, the competition is not for students (except to the extent that high schools attempt to provide vocational education to the larger community), but for facilities, equipment, and personnel. Such competition, however, and the corresponding lack of cooperation and articulation, does not appear likely to decrease dramatically without a clear delineation of responsibility between the two systems.

C. Issues and Concerns Related Primarily to JTPA Programs

Following are the major identified issues and concerns that apply primarily to JTPA programs.

1. Is the current administrative organization of vocation/technical education (including JTPA) unduly complex?

In an apparent attempt to clarify the many and diverse State agency roles in vocational/technical education (including JTPA), The North Carolina General Assembly requested (in Senate Bill 1, Section 118) that the Office of State Budget and Management in cooperation with the State Job Training Coordinating Council develop a comprehensive inventory of State-administered employment and training programs. In addition to providing various descriptive information about these programs, the inventory also was expected to identify:

- Areas where overlap or duplication occurs.
- Areas where different sources of funds are provided to an agency for employment and training of the same personnel.
- Specific efforts to reduce double funding.
- State agencies administering employment and training programs where actual training is contracted to others.
- The amount of administrative funds being used by these subcontracting agencies.
- The amount of additional funds that could be used for direct services or training of the client population if the subcontracting agency is eliminated.

While this study was completed and reported in May of 1986,[33] the study report emphasized the "first attempt" nature of the study and listed a number of "un-answered questions" that should be taken into consideration before major conclusions could be drawn. These unanswered questions included questions regarding the appropriate population to be included in such a study, how relationships between programs should be defined, and inconsistencies in reporting methods across agencies.

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[33] See Bibliography Item 165.

Particularly pertinent to the present discussion is that the above report identified a total of 32 employment and training programs being administered by 10 divisions within 7 departments (including the Department of Natural Resources and Community Development which is responsible for general oversight of JTPA programs). In addition, two major State boards/councils appear to share responsibility for the general oversight of employment and training programs. The State Board of Education, designated as the State Board of Vocational Education and thus as the "sole State agency for the State administration of vocational education at all levels," is charged for example to insure that "articulation will occur with institutions, agencies, councils, and other organizations having responsibility for manpower development.[34] At the same time, the State Job Training Coordinating Council is established to "oversee the State's goals for employment and training" including, for example, the goal of "avoiding unnecessary duplication of employment and training services by State agencies."[35] One report,[36] in commenting on the general organization structure of vocational education (including JTPA), concluded that "due to the complexities and complications of both the vocational education and JTPA programs, it is remarkable, due to the bureaucratic maze, that the programs work at all."

2. Is there a need for further integration of the JTPA programs and participants into the economic development efforts of the State?

The 1985 General Assembly directed that the State Job Training Coordinating Council

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34/ Article 10.G.S.115C.

35/ House Bill 1333.

36/ See Bibliography Item 151.

> "... shall have a standing committee to be known as the Job Training Interagency Committee. The members of the committee shall be the Secretaries of Natural Resources and Community Development and Commerce, the President of the Department of Community Colleges, the Commissioner of Labor, and the Superintendent of Public Instruction or their designees. This Committee shall jointly develop and implement a plan to integrate the Job Training Partnership Act program and participants into the economic development efforts of the State. Such a plan shall make maximum use of customized training and on-the-job training efforts of existing, new, or expanding businesses. This plan shall be developed and implemented no later than February 1, 1986. A copy of the plan shall be submitted to the President of the North Carolina Senate and the Speaker of the North Carolina House of Representatives no later than December 15, 1985."[37]

In response to this mandate, a plan was developed[38] that indicated the following needs for a closer relationship between JTPA and economic development.

-- The State Job Training Coordination Council needs to give direction in relating the broad, traditional mission of JTPA to economic development.

-- ... JTPA needs to contribute to the development of a fertile environment for economic development by assisting in the development of a trained workforce. Additionally, and very importantly, JTPA should gear training not only to newly recruited businesses, but also to expanding business and to small business.

-- There exists a need to close a major gap resulting from (1) the failure of JTPA to become a part of local economic networks and (2) the lack of coordinated planning between job training and economic development.

3. Is there a lack of coordination between JTPA and other employment training programs?

One report[39] partially addressed the question of coordination of JTPA programs by administering a questionnaire to local public school vocational directors regarding extent of and barriers to coordinating vocational education programs with JTPA programs. Approximately 60 percent of the respondents indicated that they (the coordination of vocational education) administered the JTPA funds and that there was reasonable coordination between programs. Other coordinators provided a list of ideas regarding how coordination between programs might be improved. These ideas, in general, reflected the difficulty of coordinating programs with closely-related purposes but differing federal and state guidelines.

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[37] N.C. Session Laws, 1985, Chapter 543, HB 133, Sec. 4(f)(3).

[38] See Bibliography Item 151.

[39] See Bibliography Item 151.

4. Is the current labor market information system sufficient for supporting the appropriate commitment of training resources?

One report[40] states that "the considerable resources invested through JTPA in job training will be wasted if we fail to train participants for the jobs which economic growth makes available to them. For many years, state leaders have recognized the need to assess and project labor demand more accurately in specific occupations in North Carolina. It should be recognized that over the years CETA and JTPA program operators have been required to use the available labor market information. Yet, they are still compelled to commit training resources with relatively inappropriate and generalized labor market information. Perhaps no other single action could go farther to integrate economic development (the creation of new jobs and JTPA training of the economically disadvantaged to participate in our economic growth) than the provision of reliable, timely, localized labor market information. By making the investment necessary to collect, analyze and project appropriate, localized labor market information, the impact of JTPA investments in training could be multiplied."

This report also suggested that the most pressing needs included the expansion of the Occupational Employment Statistics survey, the upgrading of the occupational employment projections program and the improvement of the survey of wages. (All of these data collections programs are conducted by the Labor Market Information (LMI) Division of the North Carolina Employment Security Commission.) Details of these indicated needs were as follows:

-- The Occupational Employment Statistics survey provides detailed information on the staffing patterns of North Carolina industries. These staffing patterns are useful planning tools in their own right; in addition, though, they are the foundation of the projections program. The expansion of the survey would greatly improve the reliability and accuracy of the staffing pattern estimates as well as the projections of occupational employment.

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[40] See Bibliography Item 76.

- Upgrading the occupational employment projections program would benefit all local planners, including JTPA operatives. In particular, JTPA planners would benefit from more frequent rounds of projections and the configuration of the projections along SDA boundaries. It would be useful as well for JTPA planners if the rounds of projections conformed to the JTPA planning cycle.

- Currently, LMI conducts an annual survey of wage rates in selected occupations in manufacturing industries. Given the changing character of the North Carolina economy, JTPA planners would benefit directly from the expansion of the wage survey to include occupations in nonmanufacturing industries. Currently, labor economists forecast that 90 percent of more of the net additions to employment in the future will be in nonmanufacturing industry sectors. Wage information is crucial for local planners seeking to place individuals in jobs. At present, there is no systematic survey of wage rates for nonmanufacturing occupations (i.e., that includes nonmanufacturing occupations in nonmanufacturing industries), which is a barrier to preparation for placement of individuals in the most rapidly growing sectors of the North Carolina economy.

Several reasons are offered (by LMI staff members and other interviewed personnel) regarding why occupational employment statistics fail to meet the expectations of some of the users. The system operates under federal guidelines that, at least in part, dictate the level of emphasis that may be placed on various data collection activities, various definitional problems exist regarding occupational categories and appropriate training requirements to qualify for a particular occupational category, the validity of essential data (that often are collected by other agencies) often is questionable, and the various users of occupational statistics have differing and often conflicting data needs.

One approach to clarifying system needs might be to consider the extent to which the system data are used to justify decisions already made versus the extent to which the data are used as a major basis for the making of decisions. An argument could be made that two major users of the system (the Public School System and the Community College System) only minimally use the system data as a basis for programmatic decisions, and that this likely would not change even if the quality of the data were improved. Any direct relationship between current labor market information and Public School System decisions regarding vocational education offerings is tenuous at best, and programmatic decisions in local community colleges and technical institutes typically are based primarily on local needs analysis and only secondarily on statewide labor market information. In both systems, on the other hand, information provided by the Public School System and Community College System to LMI as supply data appear to be used primarily to justify the status quo by showing success rates of "completers" in securing employment. While this is not intended to imply that the noted use (and non-use) of the system data is inappropriate, it is intended to show possible implications for data information system operation.

Of additional note, is that the current labor market information system linkages between occupational demand and that portion of occupational supply information supplied by the Public School System would be considerably more difficult to establish if the recommendation in subsections V.A and V.B of this report are implemented. This is because all high school graduates would be "completers" of an "occupational" (either professional or vocational) sequence of study, but the more generalized nature of the sequence content would reduce even further the current tenuous relationships between completed vocational courses and specific occupations.

D. Issues and Concerns Related Primarily to Teacher Preparation

Following are the major identified issues and concerns that apply primarily to vocational education teacher preparation. Of note is that these issues/concerns apply primarily to preparation of vocational education teachers for the Public School System of North Carolina. Few, if any, issues/concerns have been noted regarding teacher training for other agencies and institutions engaged in vocational education. While there are some indications of concern with community college vocational/technical teachers,[41] this does not appear to be precisely defined or widespread. Department of Community College personnel attribute this general acceptance of the status quo regarding community college vocational/technical teachers to the somewhat

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41/ See Bibliography Item 92.

different mission of the Community College System (as compared with the Public School System), differences in the student populations, and the flexibility resulting from non-tenure teacher employment practices.

The major identified issues/concerns regarding vocational teacher training are as follows.

(1) What teacher credentials should be required of public school system vocational education teachers? What should be the relationship between required teacher preparation coursework regarding how to teach and required coursework/experience regarding what to teach? What should be the earned degree requirements for vocational education teachers?

The current range of responses[42] to the above questions reflects the range in opinions regarding the legitimate mission of vocational education in the Public School System. Those who define vocational education largely in terms of occupation-specific training tend to place stronger emphasis on mastery of the knowledge and skills related to the specific occupations included in the curriculum, and comparatively less emphasis on "how to teach" as might be an emphasis in a degree program in a school or department of education. This view typically would further emphasize the value of work experience as a contributor to vocational teacher preparation, and would tend to downplay the requirement for holding undergraduate or graduate degrees. On the other hand, those who define vocational education more in term of an emphasis within the total education system and in terms of the teaching of general occupational skills applicable to a range of occupations tend to place relatively more teacher preparation emphasis on how to communicate a range of instructional content with less focus on the requirements of specific occupations. The latter view would see teacher preparation for vocational teachers as needing to be quite similar to preparation of "nonvocational" teachers and likely would emphasize more broadly based, but fewer, content courses in undergraduate vocational teacher preparation programs. This would simplify having a single school or department within each public university responsible for all programs for preparation of teachers, including vocational educational teachers.

42/ See Bibliography Item 8, 20, 29, 77, 84, 87, 94, 95, 101, 108, 119, 147, 159, 195, 196, 212.

2. Are the current State guidelines for certification of vocational education teachers and for approving teacher education programs adequate for meeting the needs? If not, what needs to be changed?

Several recent reports[43] and interviews with public school system personnel indicate considerable difficulty in understanding the certification requirements and process for vocational education teachers. Certification requirements for each of the eight program areas (i.e., prevocational, agricultural, business and office, marketing, health occupations, home economics, industrial arts, and trade and industry) appear to differ from the other vocational program areas and from the requirements for teachers of "academic" subjects. While the lateral entry and associated provisional, endorsed, or reciprocal certification classifications provide local flexibility, they also tend to add to local confusion. Clarification from the Division of Certification purportedly is not easy to obtain.

3. Are supply/demand data for vocational education teachers adequate for planning purposes related to matching the supply of vocational education teachers to the demand? If not, what needs to be done?

The major difficulties in providing good supply/demand data relate (as discussed in Section E of Appendix B) to difficulty in assessing the needs of all potential employers for vocational education teachers who will have needed vocational education teacher training, and to difficulty in assessing supply in view of the range of higher education schools or departments that might provide all or portions of the teacher training. A predominant point of view appears to be that much has been done (and is being done) by the responsible agencies to provide reasonable data in view of the various constraints. There are indications that further improvements could be realized if the mission of vocational education was clarified and the teacher certification requirements altered to narrow the gap between vocational education teachers and other teachers.

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[43] See Bibliography Items 94, 147.

V. CONCLUSION AND RECOMMENDATIONS

Following are four sets of study conclusions and recommendations. Each set is reasonably agency-specific with the first set relating to the Public School System (Subsection A), the second to the Community College System (Subsection B), the third to agencies with responsibility for JTPA Programs (Subsection C), and the fourth primarily to the university system (teacher training, Subsection D). While four of the major themes indicated in the study objectives (i.e., instructional services, goverance structures, funding mechanisms, articulation) and not addressed separately, they are addressed as they apply to each of the above noted agency-specific sets of conclusions and recommendations. These conclusions and recommendations are based on our analysis of the descriptive information summarized in Section III and the issue and concerns listed in Section IV of this report. If no recommendations are offered regarding specific study themes (e.g., funding mechanisms for certain agencies or vocational programs), this was either (a) because we concluded (and noted in this Section) that no change was needed, or (b) because no discussion of conclusions or recommendations was warranted since no specifically-related issues/concerns emerged during the study information collection activities.

A. Conclusions and Recommendations Related to the Public School System

The strong message from employers and personnel responsible for postsecondary education is that the primary basis for success in the world of work and in advanced vocational/technical education is proficiency in such basis skills as reading, writing, arithmetic, and reasoning, and that a great number of high school pupils lack proficiency in these areas. Another strong message is that vocational education and "academic" education as separate endeavors are not (and likely cannot) meet the educational needs of pupils as these needs relate to our changing and expanding economy. Together, these messages support a conclusion that:

> We cannot address the issues/concerns related to vocational education in the Public School System without addressing needs of the entire school system, and by redefining the role of vocational education as an essential emphasis in the total system.

Based on the messages summarized above, other conclusions are that this redefined role should include the following:

> Proficiency in basic skills[44] should be a fundamental element of the total education program. No other programmatic emphasis should divert the North Carolina Public School System from ensuring that all pupils obtain, to the extent of their abilities, proficiency in basic skills.
>
> Work-related education should be established as a major emphasis that pervades the total public school educational system. All education in the Public School System should be explicitely oriented toward defined outcomes, one of the more important of which should be occupational involvement.

In addition, based on the needs to (1) provide more broadly-based occupational education (as opposed to specialization in a few specific occupations), (2) realign resources to support basic education, personnel development, and laboratories and other facilities that can be used to teach basic occupational principles and practices, and (3) avoid duplication of community college personnel, equipment, and facilities, further conclusion regarding a redefined role for vocational education are as follows:

> A major vocational education emphasis should be placed upon a core of vocational curriculum in grades 9-12 that reinforces basic skills development while instilling a broad range of work-related knowledge and skills critical to adaptability, transferability, and upward mobility in life. These work-related skills should be generally applicable to a range of occupations having reasonably similar processes, materials, and/or products.
>
> Articulation arrangements should be provided for pupils who have acquired sufficient basic competencies, who are on schedule regarding high school completion, and who desire occupational-specific or advanced training, to enroll in such occupational-specific or advanced program in the Community College System.

Following is a suggested approach, or model, that represents a redefining of vocational education in the Public School System as it relates to the above conclusions. This is followed by specific recommendations for implementing the suggested approach.

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[44] As generally defined in Subsection IV.A (3) of this report.

Suggested Approach for Redefining Vocational Education in the Public School System: To help ensure that all pupils are provided with an optimum public school education to support their intended postsecondary occupational or educational endeavors, we suggest a system that encourages (1) establishment of educational/occupational goals for all pupils and (2) establishment of procedures for reaching those goals. This suggestion reflects the following factors and conditions. The objective of public school education in North Carolina appears to be "to help students become responsible, productive citizens and to help students achieve a sense of personal fulfillment."[45] This objective includes the implication that "students must develop the specific competencies needed to gain employment or continue their education."[46] As previously noted in this report, approximately 31 percent of our pupils drop out of school before completing grade 12 (with most presumably entering or attempting to enter the workforce), approximately 25 percent complete grade 12 and then enroll in a four-year college or university, and the remaining complete grade 12 and then presumably enter or attempt to enter the workforce, either before or after obtaining additional (but less-than-four-year-college) education. Thus, one basis for planning of public school education is the recognition that pupils would benefit from early selection (even if tentative) of educational goals in keeping with individual capabilities and interests, and educational content suitable for meeting those goals.

As the first step in realizing the above, we suggest that enrollment in "prevocational" education be required of all pupils in grade 7 and 8 (perhaps one semester in each grade). Since this program should include orientation to both occupations requiring four-year college or university training and occupations requiring less than four-year college or university training, the program should be retitled" Introduction to Occupations" or some similar title. A suggested organization is that the program be developed around four exploratory laboratories: business/commerce; trades/crafts; scientific/professional; and services. This organization is quite similar to the laboratory organization currently recommended in the North Carolina Standard

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45/ See Bibliography Item 9.

46/ See Bibliography Item 9.

Course of Study. The major difference is that we recommend the inclusion of professional occupations. The current 16 occupational groupings could be allocated to the exploratory laboratories as follows:

- Business/Commerce:
    - Business and Office
    - Marketing and Distribution
    - Agribusiness
    - Communications and Media
- Trades/Crafts:
    - Manufacturing
    - Construction
    - Transportation
- Scientific/Professional:
    - Natural Resources
    - Environmental Control
    - Marine Science
    - Health
    - Fine Arts and Humanities
- Services:
    - Consumer and Homemaking
    - Personal Services
    - Public Services
    - Hospitality and Recreation

During grade 7, pupils should be exposed systematically to the content in each of the exploratory laboratories so as to gain general insight into the occupational content of the world of work. These career awareness activities would be followed in grade 8 by more focused exploration in which each pupil would be required to select one or more of the sixteen or more occupational groupings and to explore these in greater detail. Occupational information should be made available to all pupils (in grades 7-12) through a statewide career information system. This career information system should provide occupational detail such as: description of occupational duties, skills requirements, magnitude of projected demand, anticipated working conditions, nature of entry-level jobs, common promotional patterns, and prevailing wage rates. Depending upon local facilities, this information should be made available through a combination of sources including computer terminals, microfiche readers, or hard copy. Whatever the format, the purpose would be the same, to provide pupils with relevant information to support subsequent decision-making regarding careers. (Of note is that such a general career information system already exists in North Carolina and is available to pupils in most public school systems).

We suggest that, by the beginning of grade 9 or 10, all pupils declare an occupational education goal by selecting one of the following occupational clusters:[47]

- -- Agribusiness
- -- Business and Office
- -- Home/Health Care
- -- Marketing
- -- Trades and Industry
- -- Services
- -- Scientific/Professional

This presumably would be an informed choice based upon the grades 7 and 8 career exploration activities, individual pupil abilities and desires (including test results), and inputs from teachers, counselors, and parents. Inputs from counselors generally would require a degree of interaction between pupils and counselors beyond what is possible with the typical current pupil-to-counselor ratios. While pupils would be discouraged from random transfer from one occupational cluster to another, the tentative nature of early secondary school career choices also should be accepted and pupils, thus, permitted to make changes at reasonable intervals. Also of note is that pupils would not be selecting specific occupations but a broad cluster of occupations having reasonably similar knowledge and skills requirements.

The choice of a cluster would provide directionality for subsequent learning activities consistent with each pupil's emerging educational and occupational interests. That is, the intent of the selection of an occupational cluster would be to assist in clarifying an appropriate high school curriculum for each pupil based upon the general occupational area of choice. The pupils, parents, and school personnel then would have a clearer idea of the educational goals for each pupil. This would tend to minimize aimless wandering through a high school curriculum and would provide a focus for the total high school experience for each pupil. Some examples of the

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47/ While these clusters are recommended, additional research may indicate a need for revision.

curriculum organization implications of the selection by each pupil of an occupational cluster are as follows.

Since scientific/professional occupations typically require at least a four-year-college or university education, the curricular focus for pupils who selected this cluster would be upon those courses typically required for admission and success in four-year college programs. These courses long have been identified and offered by most public high schools. Such traditional college preparatory courses could be augmented by (and, perhaps, in some cases replaced by) scientific/professional content areas[48] that more directly relate math and science (for example) to the world or work. Since college preparatory courses typically are already in place and pupil selection of a college preparatory track is a well-established high school alternative, this facet of this general recommendation represents but little change from current practices. The major changes would be (1) the recognition that the college preparatory track was, in reality, related to occupational choice, (2) the acceptance of the existence of legitimate and clearly defined alternatives to college preparation, and (3) the recognition that the English, mathematics, social sciences, etc. most suitable for college preparation might be different from that most suitable for pupils who select alternative goals. Of note is that pupils who elected the scientific/professional track also would be well-prepared to enter the world of work if they decided against enrolling in a four-year college. The advanced nature of portions of their coursework would offset any inefficiencies resulting from a less-than-optimum relationship between curriculum content and job skills needs. Additionally, pupils in this track could use their few electives for more occupationally-related courses in other clusters if they desired to do so.

Pupils who selected any of the remaining six clusters typically would be assuming that they likely would not enroll in a four-year college or university (however, the curriculum content in the remaining clusters would not absolutely bar such further education). The curriculum for the trades and industry track would, for example, consist primarily of coursework and laboratory experience intended to teach knowledge/skills/attitudes necessary for success in trades and industry occupations. This curriculum would, of course, include English, math, science, etc. However, this would not necessarily be the same English, math, science, etc., emphasized in the scientific/professional track. Instead, the emphasis for each pupil would be placed (to the extent permitted by class sizes, resources availability, etc.) upon teaching the English, math, science, etc. needed to succeed in the cluster of occupations selected by the pupil. The content would be primarily job related and examples and laboratory exercises would deal with realistic workplace emphases.[49] The English, math, science, etc. might or might not be different for each of the other-than-scientific/professional clusters. This would depend upon grade level, size of the pupil population, school district resource availability, and the extent to which the actual educational needs in one cluster differed from that in another cluster. For example, the grade 9 English developed for use in the trades and industry cluster probably would be the same as that for the business and office cluster; however, by grade 12 (assuming class sizes were sufficiently large) somewhat different sets of examples, exercises, and laboratory experiences might be appropriate for different clusters.

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[48] E.g., Principles of Technology, The Center for Occupational Research and Development, Waco, Texas.

Of note is that, since proficiency in such areas as English, math, and science is the first and foremost requirement for occupational success, no attempt is made here to distinguish between "vocational" and "nonvocational" education. We assume that English, math, and science most assuredly are the core of all occupational education and, thus, certainly are not "nonvocational". This not only argues for removing the distinction between "academic" education and "vocational" education but also has implications for remediation activities. If, for example, a pupil in the trades and industry cluster should enter high school without proficiency in basic skills (as previously generally defined in this report), the primary responsibility of the school system should be to provide appropriate remediation. While alternative approaches to teaching basic skills might be (and probably would be) in order at that point, every effort should be made to ensure that no other

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49/ Of note is that this does not mean there would be no teaching of great literature, poetry and music to pupils in the six vocationally-oriented clusters. It does mean these would be given, at the high school level, more of a secondary, motivational, or elective emphasis.

programmatic emphasis diverted time and resources from the task of ensuring that such pupils obtain, to the extent of their abilities, proficiency in basic skills.

While, as noted above, such subjects as English, math, and science (restructured to also address occupational needs) should constitute the core of "vocational" education, most pupils are capable of mastering such subjects and moving on to new content areas. Educational organization according to clusters presumes a less occupational-specific approach to vocational skills training. "Vocational" pupils (i.e., all pupils not electing the scientific/professional cluster) would be expected to learn fundamental knowledges, principles, and practices underlying performance of a variety of occupations comprising a cluster. The purpose (in the Public School System) would not be to develop occupationally-specific skills; no attempt would be made to duplicate within the classroom the tools and technologies of specific occupations. Instead, the emphasis would be upon developing an understanding of basic principles and practices and their application in a variety of occupational settings. Individual project work, whether in a lab or field setting, would be increasingly (as pupils move up in the grade structure) relied upon as a substitute for classroom activities. Cooperative education would be an ideal educational strategy provided that the educational content was clearly articulated and related to the work experience.

Restructuring of instructional content according to the cluster orientation could be accomplished within the broad framework of the existing vocational curriculum. Many of the current business and office courses (e.g., introduction to business, computer applications, business math, accounting), for example, already address preparation for a wide range of business and office occupations. Also, much of the currently outlined curriculum [50] for industrial arts education is suitable for providing a broad background for pupils in the trades and industry cluster (e.g., basic electricity/electronics technology, communications technology, manufacturing technology). In other clusters, much of the currently-recommended curriculum could be improved by combining groups of suggested courses into a single course (e.g., agricultural production, ornamental horticulture, and agricultural machinery

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50/ See Bibliography Item 146, 62.

could be combined with selected business curriculum content into a single agri-business course. This could provide an excellent introduction to agri-business and would not require greenhouses and other such facilities). Such content areas should be sequenced so that the more basic materials are presented in grade 9, intermediate level materials in grades 10 and 11, and the advanced skills developed in grade 12. The basic level would provide students with an introduction to basic terminology, production processes and technologies, and their organization and application in the work place. Intermediate level activities would focus on development of an understanding and application of the basic principles and practices constituting the knowledge base underlying a particular cluster. Advance level activities should be devoted to specialized learning which might occur through special projects work, practicum, internship or supervised cooperative work experience.

As with English, math, science, etc. courses noted earlier, the number of course offerings in each cluster would be, at least in part, a function of the size of the pupil population and the extent of the school district resources. The intent here is not to recommend a large number of new courses but rather to suggest dramatically fewer (and considerably less occupational-specific) courses that address the underlying principles and general knowledge and skills requirements related to clusters of occupations.

All occupation-specific Public School System programs (e.g., auto mechanics, cosmetology, horticulture, masonry) should not receive any new commitments of resources and should be phased out over a reasonable period of time. This would suggest that investment in specialized equipment and facilities be de-emphasized in favor of personnel development and multi-use facilities suitable for a variety of programs to teach a broad range of basic occupational principles and practices.

By organizing all of secondary education, including "vocational" education, according to this cluster concept, the structural distinctions between academic and vocational education would be removed. Vocational education would be integrated both organizationally and pedagogically since all programs would adhere to the cluster concept. Since all clusters would be committed to the development of cluster-related rather than occupationally-specific skills, vocational education and the balance of the educational system would share a common educational heritage. In addition, the current distinction between vocational education teachers and other teachers would largely disappear.

The secondary vocational curriculum clusters described above should be directly linked to area community college programs. Pupils who are desirous of (and educationally ready for) obtaining occupationally-specific skills should have the opportunity to pursue such training at the local community college. This would require close articulation between secondary and postsecondary program structures. Secondary programs would be expected to provide the prerequisite knowledge/skills for postsecondary occupational skills programs and postsecondary programs would have to be organized to build upon the knowledge and skills acquired in the secondary cluster programs. Articulation would be required to prevent undue duplication and overlap between secondary and postsecondary programs and to assure the transferability of skills between programs.

Linkage of secondary cluster programs with postsecondary programs would provide an integrated mechanism for the development of North Carolina's human resources. Pupils would have a clear educational pathway from the more general occupational skills and knowledge at the cluster level in the public school system to preparation for specific occupations at the community college level. Pupils choosing not to go on to postsecondary education could exit the educational system with marketable skills (proficiency in basic skills and an understanding of the work processes, theories, and technologies underlying a cluster of similar occupations). By articulation with the postsecondary system, pupils desiring additional specialization could make the transition without the penalty of duplicating previously learned materials.

Qualified pupils should be allowed to enroll in entry level courses in local community colleges while still in high school. Successful completion of these courses should count both as credit for the secondary program and as credit hours earned toward a postsecondary certificate or degree program. Qualified pupils should be allowed to take postsecondary courses on their high school campus or have transportation provided to adjacent community college facilities. Enrollment in postsecondary courses for secondary pupils should be contingent upon (1) satisfactory progress in their secondary program and (2) proficiency in the prerequisites for the community college program.

Adequate progress toward secondary degree completion could be insured by restricting postsecondary enrollment to qualified seniors only.

Articulation at the local levels should be the responsibility of local articulation committees. These committees should consist of representatives from the following constituencies: the local community college or technical institute, school districts in the community college/technical institute service areas, and the private sector. The role of these committees would be to identify the linkages between secondary curricular clusters and postsecondary occupationally-specific training programs. Once these linkages were identified, the prerequisite knowledge and skills required for entry into these programs should be established. These prerequisites should be competency based and capable of being measured by appropriate instruments or procedures. All products should be produced or identified by joint activity and should reflect committee consensus as to relevancy, adequacy and practicality.

To carry out the intent of this suggested approach (or model), the following specific recommendations are offered.

The North Carolina General Assembly should:

> Recommendation 1: Enact an Education and Work Act that would (1) affirm the central importance of work-related education (2) provide a strong mandate for changing the course of public secondary education and (3) clarify the role of public school education as it relates to the community college mission in North Carolina. Mandate the restructuring, within a specified time frame, of public secondary education according to the work-related, occupational cluster concept outlined above. Direct the State Board of Education to provide the General Assembly with a plan and accompanying budget describing the proposed activities and projected costs required to carry out the intent of the Act within the prescribed time.
>
> Recommendation 2: Revise the General Statutes of the State of North Carolina pertaining to vocational education to reflect a cluster approach to the provision of vocational education programs, services, and activities in the Public School System. More specifically, redefine the purpose of vocational skills development to emphasize the preparation of individuals for paid or unpaid employment in recognized clusters of occupations. Rescind the requirement that local vocational plans or applications be required to provide supportive labor market data. Redefine vocational skills development to mean a program, service, or activity designed to prepare individuals for paid or unpaid employment in a cluster of related occupations.

The State Board of Education and the Department of Public Instruction should:

Recommendation 3: Review and revise as necessary all educational policies to ensure that they are fully compatible with the philosophy and mandated structure for implementation of work-related education. Disseminate policy changes to local school representatives and hold sessions to ensure that the intent of the policy changes is clearly understood.

Recommendation 4: Require that all pupils enroll in an Introduction to Occupations program at grades 7 and 8 that is integrated with a statewide career information system. Update the existing Prevocational program to include business/commerce, trades/crafts, scientific/professional, and services exploratory laboratories. Support these laboratories with an appropriate statewide career information system provided by the North Carolina Occupational Information Coordinating Committee.

Recommendation 5: Develop a listing of approved occupational clusters. Make explicit the organizational rationale for the formulation of each cluster; identify occupations within each cluster and provide justification for their inclusion. Additional research may be required to provide adequate rationale for formulation of specific clusters.

Recommendation 6: Develop cluster-based curriculum for each approved occupational cluster. Review existing vocational education curricula and group into appropriate clusters. Retain for possible inclusion into cluster-based curriculum those content segments that pertain to generalized content across cluster-specific occupations. Ensure that cluster-based curricula is competency based. Sequence developed cluster competencies by grade and ability level within grades. Wherever possible, draw compentencies from already developed materials. Establish minimum proficiency levels for grade and ability levels.

Recommendation 7: Review textbooks and other instructional materials in the areas of math, language arts, science and social studies to determine the need for additional work-related curricular and instructional materials. Review secondary level textbooks and other curricular materials to determine the extent and appropriateness of educational content support provided for each cluster area. Develop appropriate instructional materials as required to support the work-related, occupational cluster concept in those areas where coverage is deficient and/or there is a paucity of work-related examples and applications.

Recommendation 8: Provide in-service workshops to assist teachers in utilizing the developed materials in an effective and efficient manner.

Recommendation 9: Define the basic skills requirements for success in employment requiring no more than a high school education. Use these requirements as a basis for establishing minimum basic skills proficiency levels. Develop remedial instruction programs and procedures for early identification and remediation of pupils with deficiencies.

Recommendation 10: Provide guidelines to local public school systems for phasing out existing occupational-specific programs.

Recommendation 11: Support the maintenance of a statewide network of industry-education councils. The purpose of these councils would be to promote active employer involvement in work-related education. The establishment of the work-related, occupational cluster concept would provide a strong basis for a public-private partnership. Councils members should represent applicable clusters of occupations rather than single specific occupations.

Recommendation 12: Establish cojointly with the Community College Board guidelines for articulation with Community College System programs. These guidelines should specify recommended procedures for the establishment of local articulation committees as well as a suggested agenda for local articulation efforts. Participate in cooperative efforts with the Community College System (as indicated in Recommendations 17 and 18).

B. Conclusions and Recommendations Related to the Community College System

The weight of the evidence has suggested that:

> The North Carolina Community College System is dedicated to the provision of vocational/technical education and is unlikely to be diverted from primary emphasis on this essential mission.
>
> The program emphasis of, and accessibility to, Community College System vocational/technical education is generally adequate for meeting the needs of students and employers.

There was, however, strong evidence that:

> The quality of Community College System vocational/technical program offerings sometimes suffers as a result of budgetary problems, some mismatch between program instructional content and program needs, and unnecessary duplication among community college institutions and between community college institutions and public schools.

To address the needs implied in the latter conclusion, we recommend the following: Of note is that recommendations 13 and 14 are discussed in detail in another recent RTI study.[51]

The Department of Community Colleges should:

> Recommendation 13: Conduct a detailed study of the actual costs of instruction over the various programs with the objective of establishing revised budgeting formulas to reimburse institutions for actual costs for their program and student configurations.
>
> Recommendation 14: Re-examine the tradition of special allocations by the General Assembly, in terms of its potential deleterious impact on equity among the institutions, and on the strength of the State Board to operate the System as a System.
>
> Recommendation 15: Intensify current efforts to examine the adequacy of faculty salaries and instructional equipment, toward identifying instances where the quality of vocational/technical education may be unacceptable or minimal.
>
> Recommendation 16: Where urgent needs for improvement to bring programs up to acceptable quality are found to exist, assess alternatives for improvement other than wholesale increase of general or specific appropriations (e.g., combining resources through counsortia programs with neighboring institutions, discontinuance of high cost programs with inadequate student or employer markets, introduction of state-of-the-art instructional technology).

Two final Community College System recommendations are based upon the inadequacy of cooperation and articulation between the two current major providers of vocational/technical education--the public schools and the community colleges/technical institutes. We suggest that much of the current lack of cooperation and articulation is a result of the current overlap in responsibilities. This condition would be greatly alleviated if our recommendation for restructuring of vocational education in the public schools is followed. We recommend that the Community College System:

> Recommendation 17: Accept the Community College System role of presumptive provider of occupational-specific education in North Carolina and work with the Department of Public Instruction and local

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[51] See Bibliography Item 44. This study also recommended that consideration be given to modifying the funding formula to fit some administrative costs driven by unduplicated headcount, and that allocation of instructional costs (for the present) continue to be based on FTE.

school systems to bring about an orderly and timely transfer of occupational-specific educational responsibilities from the public high schools to the local community colleges and technical institutes.

Recommendation 18: Initiate a joint task force of members of the State Board of Education and the State Board of Community Colleges (with assistance of their departmental staff members, as appropriate) to establish improved cooperation and articulation between the two systems and between local public school and community college boards and educational programs.

C. Conclusions and Recommendations Related to JTPA Programs

We, unfortunately, cannot draw a solid conclusion concerning any needs for an over-all reorganization of the general administration of JTPA programs or for increased coordination of JTPA and other economic development efforts. In regard to the supposed need for further integration of JTPA with economic development efforts and coordination between JTPA and other manpower development programs (as discussed in Subsection IV.6), we note that sufficient specific evidence of such needs has not been identified by available reports and interviewed personnel to provide a basis for a strong conclusion. While we have (in other sections of this report) drawn conclusions and made recommendations regarding organizational aspects of vocational/technical education (including JTPA) in the Public School System and Community College System, those conclusions and recommendations are based, at least in part, on a reasonably clear understanding of "reasons for being" of those agencies. A thorough analysis of the organizational roles related to JTPA of other agencies (i.e., Department of Commerce, Department of Corrections, Department of Labor, Department of Human Resources, and the Department of Natural Resources and Community Development) must include a thorough analysis of the over-all mission and purpose and operational procedures of a major portion of the total State government. Such an analysis clearly is beyond the scope of this study. Also of note is that (as detailed in Appendices D and F of this report) the numbers of citizens served and the level of State funding for JTPA-related services are quite small as compared with other vocational/technical education programs. A strong federal presence regarding decisions as to how JTPA monies may be expended also limits the possibilities of State control. Such factors would appear to indicate the prudency of placing the emphasis of this study on other aspects of vocational/technical education. We can, however, conclude that:

> The current and planned State initiatives by the Economic Development Committee of the North Carolina Job Training Coordinating Committee, the State Advisory Council on Vocational Education and other State agencies toward clarifying and coordinating the various agency JTPA activities are justified and appropriate for addressing organizational issues as they relate to JTPA programs.

Another conclusion regarding the current labor market information system is that:

> The current labor market information system has a number of shortcomings that are, at least in part, results of competing and perhaps unclear demands placed on the system. Any real improvement likely must be based upon clarification and prioritization of system needs. The system is not likely to succeed at being all things to all people.

Based upon the information and opinions discussed under the related issues and concerns, the several conclusions noted above, and the previous recommendations regarding the mission of vocational/technical education in the Public School System and Community College System, we make the following two recommendations.

The North Carolina Job Training Coordinating Council, the State Advisory Council on Vocational Education and other State agencies should:

> Recommendation 19: Continue current and planned initiatives toward clarification and coordination of JTPA and economic development activities in the State.

The Labor Market Information Division (and the State Occupational Information Coordinating Committee) should:

> Recommendation 20: Reappraise the nature and extent of labor market information needs with the intent of revising the system so as to better meet priority needs. These activities should follow clarification (as recommended in other subsections of this report) of the vocational education mission of two major users of the State labor market information system (the Public School System and the Community College System).

D. Conclusions and Recommendations Related to Teacher Preparation

Two sets of issues and concerns listed in Section IV of this report have strong implications for conclusions and recommendations regarding teacher preparation. First, the discussions related to the Public School System vocational education mission (in Subsection IV.A) has implications for teacher preparation needs to meet that mission. Second, the discussion related specifically to teacher preparation (in Subsection IV.D) includes concerns regarding the nature and extent of teacher preparation. Together, these two sets of issues/concerns, along with the related discussions, support an initial conclusion that:

> Any decision regarding the nature and extent of preparation of vocational education teachers for the public school system must be preceded by a decision as to the mission of vocational education in the public school system; i.e., decisions regarding teacher preparation must be based on decisions as to what the teachers are expected to do once the teachers are prepared.

To the extent, then, that the above is a valid conclusion, further conclusions that address the issues and concerns regarding teacher preparation must rely heavily on our conclusions regarding a redefined role of vocational education in the Public School System. The following conclusions are thought to be logical extensions of our recommended role for vocational education as it applies to the needs for teacher preparation to support that role.

> There is a need for all middle school and high school teachers of subjects directly related to success in the world of work (including teachers of English, mathematics, science, and social studies) to be more proficient in the use of concrete, work-related examples as a means for making the curriculum content more pertinent to pupil needs and interests.
>
> There is a need for the standards for public school vocational education teachers and the related general nature of vocational education teacher preparation to be essentially the same as for other public school teachers. This need particularly applies to those vocational areas (e.g., trades and industry) that currently emphasize specialization in a particular occupation (but would no longer do so if our recommendations regarding the mission of public school vocational education were followed).
>
> There is a need for increased coordination of vocational education teacher preparation within the institutions of higher education to insure an appropriate relationship between preparation related to how to teach and preparation related to what to teach.

Following are specific recommendations for improving vocational education teacher preparation by addressing the needs indicated in the above conclusions.

The Department of Public Instruction should:

> Recommendation 21: Update Competencies and Guidelines for Approved Teacher Education Programs to (1) reflect the need for all middle school and high school teachers of basic skills subjects (i.e., English, mathematics, science, and social studies) to be able to relate the subject being taught to the world of work and (2) reflect

the recommended shift from occupational-specific education to cluster-based vocational education (as described in Subsection V.A of this report). This latter item applies particularly to the guidelines for trades and industry teachers, which should be combined with, or restructured more along the lines of, the current guidelines for industrial arts teachers.

Recommendation 22: Develop and implement in-service teacher training to enhance the emphasis on relating the subject being taught to the world of work.

Recommendation 23: Revise the credentialing requirements for vocational education teachers to emphasize their equal status with other teachers. Make the undergraduate or graduate degree requirements of vocational education teachers similar to the requirements for other teachers. Rescind any requirement for proficiency in a specific occupation.

The institutions of higher education in North Carolina that maintain teacher preparation programs should:

Recommendation 24: Include in teacher training programs an emphasis on relating public school subjects being taught to the world of work. Adjust teacher training categories and content to match the redefined (by DPI) role of vocational education.

Recommendation 25: Establish (in each institution of higher education in the State that is involved in teacher training) a single department or school as responsible for coordination of all public school teacher education (including vocational teacher preparation).

Appendix A

The Legislative Mandate Regarding a Comprehensive Study of Vocational/Technical Education

Appendix A

The Legislative Mandate Regarding a Comprehensive Study of Vocational/Technical Education

The General Assembly of 1985 determined that a comprehensive study of vocational education was needed and identified funds which could be used to finance the study. The Joint Legislative Commission on Governmental Operations is responsible for the overall direction of the study. The study "shall":

(1) Examine the General Statutes applicable to vocational and technical education and determine whether the statutes are being implemented;

(2) Review current studies of vocational and technical education needs and practices to identify key findings that are relevant to North Carolina; and

(3) Determine the current status of vocational and technical education in North Carolina. The status review shall examine:

- a. What is offered;
- b. Where it is offered;
- c. What equipment and facilities are used;
- d. By whom it is taught and to whom it is taught;
- e. What happens to the graduates;
- f. What it costs and who pays for it;
- g. Whether there is unnecessary duplication; and
- h. Whether it is in compliance with federal funding requirements.

(4) Review the status of vocational and technical teacher training in North Carolina. This review shall include examining:

- a. Where vocational and technical instructors are trained;
- b By whom they are trained; and
- c. The supply of and demand for these instructors.

(5) Recommend the shape and structure of a more effective and efficient vocational and technical delivery system in North Carolina. This shall identify current policies, standards, and practices that should be continued and recommend needed changes to implement the improved system.

The overall purpose of the inquiry is to study relationship of vocational education and skills training offered in the public schools, community college institutions, as well as proprietary schools, public and private colleges and universities, and training offered under the Job Training Partnership Act. The Joint Legislative Commission on Governmental Operations contracted with the Research Triangle Institute (RTI) to conducted the study. The study is to be completed by the end of 1986 so the results of the study may be considered by the 1987 General Assembly.

Appendix B

Bibliography of Reviewed Documents

Appendix B

Bibliography of Reviewed Documents

1. Advisory Committee to respond to the Report of the Commission on the Future of North Carolina. (1984). Educational Leadership for the Future (Recommendations for the North Carolina Community College System). Raleigh, NC: North Carolina Department of Community Colleges.

2. Advisory Council for Technical-Vocational Education in Texas. (1986, June.) Recommendations to Reshape Vocational Education to Meet the New Challenges of the Texas Economy. Austin, TX: Author.

3. Annual Enrollment Report: Student Enrollment and Full-time Equivalents, 1984-85, Volume 20. (1985). Raleigh, NC: Research and Planning Services, Department of Community Colleges.

This publication contains enrollment data by program for the 4 technical institutes, 30 technical colleges, and 24 community colleges in the North Carolina Community College System for the 1984-85 school year.

4. ARC Writing Project--Evaluation. (Undated). Raleigh, NC: North Carolina Department of Public Instruction.

The ARC Writing Project was designed to train English and vocational teachers to improve students abilities in the writing process through focusing on the content of technical and work related skills within the vocational program areas. This paper reports significant achievements of the project.

5. Attwood, M.L. (1984). Excellence in postsecondary vocational education. In J. H. Magisos (Ed.), Excellence in Vocational Education: Four Levels, Four Perspectives. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, National Center for Research in Vocational Education, The Ohio State University.

The relationship of the national reports on educational excellence and post secondary vocational education are examined.

6. Augenblick, Van de Water & Associates. (1986). High Education in South Carolina: An Agenda for the future (Report to the South Carolina Commission on Higher Education). Denver, CO: Authors.

7. Autry, G. B. (1985). The Undereducated Adult Population and Economic Development in Kentucky (Prepared for the Commission on Vocational/ Technical Education, Commonwealth of Kentucky). Chapel Hill, NC: MDC, Inc.

Maintaining that Kentucky's recent impressive commitment to primary and secondary education will not succeed, either as an economic development strategy or an educational strategy, unless the educational needs of adults are also made a priority, this report makes six recommendations that, if implemented, "will go far toward establishing a stable, competitive base on which the state can build a sound development policy for its people."

8. Barnes, G. T. (1986, July). *Enrollments and Degrees Conferred in Professional Education Programs Offered by North Carolina Colleges and Universities*. Paper presented to the North Carolina State Board of Education, Asheville, N.C.

9. *The Basic Education Program for North Carolina's Public Schools, Revised November, 1985* (Originally Proposed to the North Carolina General Assembly, October 15, 1984). (1985). Raleigh, NC: North Carolina State Board of Education.

This publication describes the proposed basic education for grades K-12 for North Carolina public schools. Areas covered are arts, communication skills, media and computer skills, second languages, healthful living, mathematics, science, social studies, and vocational education.

10. Belcher, C.B. (1976, March). *Analysis of the Changing Role of the North Carolina Secondary Occupational Education State Staff for the Twenty-Five Year Period, 1950-1975* (Presented in partial fulfillment of the requirements for ED504E, Principles and Practices of Introduction to Vocations, North Carolina State University). Raleigh, NC: Author.

The three objectives of this paper were: (1) to examine the changes in federal and state legislation which impacted on role and responsibility changes for secondary occupational education state - level staff in North Carolina, (2) to examine and reflect the organizational structures for secondary occupational education under each of the State Superintendents for Public Instructions for 1950-1975, and (3) to compare the roles and responsibilities of the State-level secondary occupational education staffs for the 25-year period. Conclusions and recommendations are included.

11. Bennett, W. (1986, September 12). What schools need to teach, *The Washington Times.*

This article was adapted by Secretary of Education William Bennett, at the request of *The Washington Times*, from his report *First Lessons.* The article was reprinted in *Daily Education News*.

12. Benson, C. S. *Access to Quality Vocational Education* (A paper prepared for the National Assessment of Vocational Education). Washington, D.C.: U.S. Department of Education.

13. Betts, J. (1986, April). The job training spectrum: from the classroom to the boardroom. *North Carolina Insight*, p. 84-95.

14. Bishop, J. H. *Academic and Occupational Training* (A paper prepared for the Design Conference for the National Assessment of Vocation Education). Washington, D.C.: U.S. Department of Education.

15. Bishop, J. H. Preparing youth for employment: The school's role. *Facts and Findings* (Research and Policy Reviews by the National Center for Research in Vocational Education), *3(18)*, 1-7.

16. Bottoms, G. (Speaker). (1986). *The Future of Vocational Education*. (Address to the North Carolina Vocational Education Legislative Study Committee). [Cassett Recording]. Raleigh, NC: North Carolina Vocational Education Legislative Study Committee.

The speaker discussed the history of vocational education, the impact of new legislation, trends, in vocational education, and the results of recent studies. he suggests possible issues to be addressed in the North Carolina study of vocational education.

17. Brannon, D. R. (1986). *Recommendations for Improving Vocational Teacher Education in North Carolina (Presented to the Task Force on the Preparation of Teachers)*. Raleigh, NC: Department of Public Instruction.

18. Brannon, D. R. (1982). *Secondary Vocational Education's Math and Science Contributions to North Carolina's High Technology Economy* (Approved by the North Carolina Vocational Association Board of Directors). Raleigh, NC: Division of Vocational Education.

19. Brannon, D. R. (1985). *Toward Excellence in Secondary Vocational Education: Using Evaluation Results*, Information Series No. 294. National Center for Research in Vocational Education.

20. Brooks, J. C. (1983, November). *Apprenticeship in the United States*. Statement of John C. Brooks, Elected Commissioner of Labor, Chairman N.C. Apprenticeship Council, President, National Apprenticeship Program before the Subcommittee on Employment and Training of the House Education and Labor Committee, U.S. House of Representatives, Washington, D.C.

21. *Business Conference Series/Preliminary Report. Session I: Electronics Industry*. (1985). Raleigh NC: Department of Community Colleges.

This is the report of the first of a series of small conferences sponsored by the State Board of Community Colleges to elict the views of business leaders on the impact which new technologies and economic changes will have on their employment needs over the mid to long range and the role of community colleges in meeting those needs.

22. *Business Conference Series/Preliminary Report. Session II: Metal Working Industry.* (1985). Raleigh, NC: Department of Community Colleges.

This is the report of the second of a series of small conferences sponsored by the Board of Community Colleges to elict the views of business leaders on the impact which new technologies and economic changes will have on their employment needs over the mid to long range and the role of community colleges in meeting those needs.

23. *Business Conference Series/Preliminary Report. Session III: Utilities Industry.* (1985). Raleigh, NC: Department of Community College.

This is the report of the third of a series of small conferences sponsored by the State Board of Community Colleges to elict the views of business leaders on the impact which new technologies and economic changes will have on their employment needs over the mid to long range and the role of community colleges in meeting those needs.

24. *Business Conference Series/Preliminary Report. Session IV: Health Industry and Session V: Chemicals and Pharmaceuticals Industries.* (1985). Raleigh, NC: Department of Community Colleges.

This is the report of the fourth and fifth of a series of small conferences sponsored by the State Board of Community Colleges to elict the views of business leaders on the impact which new technologies and economic changes will have on their employment needs over the mid to long range and the role of community colleges in meeting those needs.

25. *Business Conference Series/Preliminary Report. Session VI: Travel/Tourism Industry and Session VII: Furniture Industry.* (1985). Raleigh, NC: Department of Community Colleges.

This is the report of the sixth and seventh of a series of small conferences sponsored by the State Board of Community Colleges to elict the views of business leaders on the impact which new technologies and economic changes will have on their employment needs over the mid to long range and the role of community colleges in meeting those needs.

26. *Business Conference Series/Preliminary Report. Session VIII: Transportation, Session IX: Public Sector, and Session X: Construction.* (1986). Raleigh, NC: Department of Community Colleges.

27. Calhoun, C. C. (1986). *Vocational Teacher Education*. (Position paper prepared for the Legislative Study Committee on Vocational Education). Greenville, NC: East Carolina University.

28. California voc ed community takes on the academic reform challenge. (1986, July). *Education Daily*, 26-27.

29. Carnegie Forum on Education and the Economy's Task Force on Teaching as a Profession. (1986, May). *A Nation Prepared: Teachers for the 21st Century*. New York, NY: Author.

30. Cetron, M. J., Soriano, B., and Gayle, M. Schools of the future: Education approaches the twenty-first century. *The Futurist*, August, 1985, pp. 18-23.

41. Cross, K. P. (1986, March). Taking Teaching Seriously. Paper presented for the Annual Meeting of the American Association for Higher Education, Washington, D.C.

42. Curriculum Study: Vocational Education (A Report from the Vocational Education Curriculum Study Committee to the North Carolina State Board of Education). (1985). Raleigh, NC: North Carolina Department of Public Instruction.

43. Daggett, W. R. (1986). New Directions for Vocational Education at the Secondary School Level (Draft). Albany, NY: The State Education Department.

This paper describes the technological, economic, demographic, and societal changes occurring in the United States; reviews the recent national reports on education such as A Nation at Risk, and outlines a new mission for vocational education at the secondary school level. The paper includes detailed descriptions of the key skills and competencies, scheduling options, and sequence requirements for the new vocational education program, as well as a discussion of state standards and modifications in teacher education.

44. Davis, J. A., Cruze, A. M., Lawrence, J. E. S., and Colegrove, K. (1986). The North Carolina Community College Study: Mission, Enrollment and Staffing Patterns, Funding Procedures, and Administration and Governance: Final Report (Prepared for the North Carolina State Board of Community Colleges). Research Triangle Park, NC: Research Triangle Institute.

45. Division of Employment and Training, Department of Natural Resources and Community Development (1986, April). Governor's Coordination and Special Services Plan for Program Years 1986 and 1987, Raleigh, NC: Author.

This plan, which was submitted by the Governor of North Carolina, to the U.S. Department of Labor, contains North Carolina's annual state program information for the JTPA program years 1986-87. Program information was divided into five main parts: (1) state policy, (2) projected use of resources, (3) performance standards adjustments, (4) summary of coordination efforts, and (5) non-discrimination policy.

46. Division of Employment and Training, Department of Natural Resources and Community Development. (1986). Job Training Partnership Act in North Carolina, Program Year 1986. Raleigh, NC: Author.

This comprehensive report contains background information on JTPA as well as information on JTPA funding for North Carolina program year 1986, service delivery area (SDA) allocations, planned expenditures (JTPA-78% funding) by actively type and SDA, JTPA programs and activities, and detailed SDA program data.

47. Division of Employment and Training, Department of Natural Resources and Community Development. (Undated). JTPA in a Nutshell: A Primer on the Job Training Partnership Act Program in North Carolina. Raleigh, NC: Author.

This two-page introduction to JTPA answers the following questions: What is JTPA? What does it do? How is it administered? How is it planned? Who provides the services?

48. Division of Employment and Training, Department of Natural Resources and Community Development. (Undated). North Carolina's Implementation of the Job Training Partnership Act: An Overview. Raleigh, NC: Author.

This paper explains JTPA federal legislation and the roles of the North Carolina State government and the local service delivery areas in administering JTPA.

49. Division of Occupational Education Programs, The State Education Department. (1984). Program Directions for Occupational Education in New York State: A Position Paper. Albany, NY: Author.

50. Division of Pupil Personnel Services, North Carolina Department of Public Instruction. (1979). Master Plan for Elementary and Secondary Guidance in North Carolina. Raleigh, NC: Author.

51. Division of Research, The Department of Public Instruction. (1986, May). The Status of Educational Achievement in North Carolina, 1986 (Prepared for the Governmental Operations Commission, North Carolina State Legislature). Raleigh, NC: Author.

52. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). A Planning Guide for Implementing Programs of Prevocational Education. Raleigh, NC: Author.

53. Division of Vocational Education, North Carolina Department of Public Instruction. (Undated). A Resource Notebook for Action Planning for the Future (Draft: For discussion only). Raleigh, NC: Author.

54. Division of Vocational Education, North Carolina Department of Public Instruction. (1986). Student Follow-Up Results (VEIS-4). Raleigh, NC: Author.

55. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Agricultural Education (North Carolina Competency-Based Curriculum). Raleigh, NC: Author.

56. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Business and Office Education (North Carolina Competency-Based Curriculum). Raleigh, NC: Author.

57. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Communication Skills, K-12 (North Carolina Competency-Based Curriculum). Raleigh, NC: Author.

58. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Guidance, K-12 (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

59. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Healthful Living, K-12 (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

60. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Health Occupations Education (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

61. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Home Economics Education (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

62. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Industrial Arts Education (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

63. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Marketing Education (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

64. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Mathematics, K-12 (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

65. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Prevocational Program, Grades 7-9 (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

66. Division of Vocational Education, North Carolina Department of Public Instruction. (1985). Teacher Handbook Vocational Education Trade and Industrial Education (North Carolina Compentency-Based Curriculum). Raleigh, NC: Author.

67. Division of Vocational Education, North Carolina Department of Public Instruction and the Research and Planning Office, North Carolina Department of Community Colleges. (1986, January). Effects of Technology and Change on the Industrial Mix and on Work in North Carolina (Prepared for the Legislative Subcommittee - Study of Vocational Education of the Joint Legislative Committee on Governmental Operations). Raleigh, NC: Authors.

68. Division of Vocational Education, North Carolina Department of Public Instruction and the Research and Planning Office, North Carolina Departmentof Community Colleges. (1986 January). Information Paper: New Demands of the Carl Perkins Vocational Education Act (Prepared for the Legislative Subcommittee - Study of Vocational Education of the Joint Legislative Committee on Governmental Operations). Raleigh, NC: Authors.

In addition to giving the background for the Carl Perkins Vocational Education Act, this paper discussed seven significant changes this act made in vocational education and its impact on secondary vocational education programs and post-secondary vocational education. Questions for further study were given.

69. Division of Vocational Education, North Carolina Department of Public Instruction and the Research and Planning Office, North Carolina Department of Community Colleges. (1986, January). Needs of People in North Carolina: Displaced Workers and Disadvantaged Workers (Prepared for the Legislative Subcommittee-Study of Vocational Education of the Joint Legislative Committee on Governmental Operations). Raleigh, NC: Authors.

70. Division of Vocational Education, North Carolina Department of Public Instruction. (1985, July). Challenge: A Handbook for Serving Disadvantaged and Handicapped Students Under the Provisions of the Carl D. Perkins Vocational Act of 1984 (P.L. 98-524). Raleigh, NC: Author.

71. Division of Vocational Education, Oregon Department of Education. (1986). Vocational Education for a Productive Society: The New Oregon Model (Working Draft). Salem, OR: Author.

72. Donovan, M.A. (1984, June). The private sector and vocational education. In Setting Goals for Vocational Education: A Panel Discussion of Vocational Education Policy in the South before the Executive Committee of the Southern Growth Policies Board. Panel discussion conducted in Atlanta, Georgia. Research Triangle Park, NC: Southern Growth Policies Board.

The presenter, Manager of Legislative and Regulative Affairs for the National Alliance of Business, Washington, DC., presented the perspective of the employer community on the issues affecting the future of vocational education and how that community would like to see the states address these issues.

73. Douglass, R. S. Access to Quality Vocational Education: A Sex Equity Perspective (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D. C.: U.S. Department of Education.

74. Dunham, D. B. (1986, April). An open letter to the Secretary of Education. Vocational Educaiton Journal, p. 11

75. Dunham, D. B. (1986). Looking forward: AVA and the third millenium. Vocational Educaiton Journal.

76. Economic Development Committee, North Carolina Job Training Coordinating Council. (1986). Job Training/Economic Development Coordination (Report to the North Carolina General Assembly). Raleigh, NC: Author.

77. Education for Economic Growth: An Action Plan for North Carolina (The Report and Recommendations of the North Carolina Commission on Education for Economic Growth). (1984, April). Raleigh, NC: Office of the Governor.

78. Education for Employment Policy Study: A Preliminary Report, Part I (Presented to the Illinois State Board of Education Planning and Policy Committee). (1983). Springfield. IL: Illinois State Board of Education.

This staff study report analyzes the issues surrounding education for employment in Illinois. Part I describes the education for employment program in a historical and present day context.

79. Education for Employment Policy Study: Part II, A Report and Recommendations Presented to the Illinois State Board of Education Planning and Policy Committee). (1983). Springfield, IL: Illinois State Board of Education.

This staff study report analyzes the issues surrounding education for employment in Illinois. Part II identifies the issues, presents the staff analysis and provides preliminary recommendations for the State Board consideration.

80. Educational Measurement, 1982

81. Elmore, R. F. Analyzing the Implementation of Federal Vocational Education Policy: The Perkins Act of 1984 (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D. C.: U.S. Department of Education.

82. Evans, Rupert. (1982). Why vocational education belongs in the comprehensive high school. Voc Ed., 57(6).

The author builds a case for vocational education in the comprehensive high school, addressing vocational education learning strategies and the decrease in barriers among high school curriculum.

83. Evans, R. E. Vocational Education and Reindustrialization (Occasional Paper No. 75). (1981). Columbis, OH: The National Center for Research in Vocational Education of the Ohio State University.

84. Feistritzer, C. E. (1983). The Condition of Teaching: A State by State Analysis. A Carnegie Foundation Technical Report. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

The report provides a state by state analysis of the condition of teaching in the United States. It analyzes changes over the past decade, for the country as a whole and for each state, in: general population shifts; school enrollments; number of teachers; school finance and its relationship to average economic conditions, personal and per capita income, and sources of revenue in each state; salaries of teachers; certification requirements of the teaching profesison; and who is going into the teaching profession and what portends for the teaching force in future years.

85. Feldman, M. (October/November, 1985). The ambush of vocational education. AACJC Journal, pp. 16-20.

The author argues for a new definition of educational excellence that will tend to integrate the educational enterprise (academic, vocational, and general education) and that will not resume the destructive process of fragmentation. Specifically, he thinks we should insist on a new national commission on which both academic and vocational educators are fairly represented to begin to repair the damage done to vocational education by recent national commissions.

86. Field, R. H. State Legislative Perceptions of Vocational Education (Occasional Paper No. 102). (1984). Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University.

The author, who is State Director for Education and Labor of the National Conference of State Legislatures, presents his assessment of "how State legislatures look at vocational education today in the light of the overall educational excellence and reform movement that seems to be sweeping the country".

87. The Future of North Carolina: Goals and Recommendations for the Year 2000 (Report of the Commission on the Future of North Carolina). (Undated). Raleigh, NC: North Carolina Department of Administration.

88. Galambos, E. (1984, June). Results of a study of vocational education. In Setting Goals for Vocational Education: A Panel Discussion of Vocational Education Policy in the South Before the Executive Committee of the Southern Growth Policies Board (Panel discussion conducted in Atlanta, Georgia). Research Triangle Park, NC: Southern Growth Policies Board.

The presenter, a research associate for the Southern Regional Education Board, Atlanta, GA, discussed the mission of vocational education in secondary schools, some myths regarding vocational education, and the Southern Regional Education Board's recommendations for vocational education.

89. Galambos, E. (Undated). Improving vocational education: What can legislation do? SREB. (Available from Southern Regional Education Board, 1340 Spring Street, N.W., Atlanta, GA 30309).

The purposes of vocational education in high schools and directions for change are discussed. Questions that legislators might ask about their state's vocational education programs are given.

90. Gander, J. M., Madsen, R. A., and Connaughton, J. E. (1985). North Carolina Occupational Forecasts for 1985 Through 1990 for Selected Occupational Clusters (Prepared for the North Carolina Department of Community Colleges). Charlotte, NC: University of North Carolina at Charlotte.

91. Gentry, D. K. (1979). National documentary study of the state level governance of vocational education. Unpublished doctoral dissertation, Indiana University.

This study classified the administrative functions performed by vocational service areas in relationship to the governance structure of vocational education at the state level. The study's product was documentation of the governance structures used by the fifty states of the U.S. to comply with the 1963 federal mandate for a sole state agency for the administration of vocaitonal educaiton.

92. Geyer, P.D., Lackey, L., Brannon, Y., Shearon, R. W., Cox, L., & Holley, J. (1986, May). Analysis of Declining Enrollment in Selected Vocational Programs (Prepared for North Carolina Department of Community Colleges). Raleigh, NC: Center for Urban Affairs and Community Services, North Carolina State University.

This report describes a study that served to determine the possible causes of enrollment decline in selected community college vocational programs and the means by which the community colleges are or could be maintaining (or increasing) enrollment in these programs.

93. Grasso, J. T. and Shea, J. R. (1979). Vocational Education and Training: Impact on Youth. Berkeley, CA: The Carnegie Council on Policy Studies of Higher Education.

94. Hall, J. S., (1986, June). North Carolina Council of Vocational Teacher Educators. Presentation to the University of North Carolina Board of Governors Task Force on the Preparation of Teachers, Greensboro, NC.

95. Hawley, W. D. (Undated). The Education of High School Vocational Educators. Nashville, TN: Vanderbilt University.

96. Highfill, H. A. (1975). Occupational Education in North Carolina: A review of State Policy and Planning, 1973-74, and A Look at the Future. Raleigh, NC: North Carolina Fiscal Research Division.

97. Hoachlander, E. G. (1986). The Federal Role in Vocational Education (A paper prepared for the Design Conference for the national Assessment of Vocational Education). Washington, D. C.: U. S. Department of Education.

98. Hoachlander, E. G. (1983). Vocational Education in the Nation's Secondary Schools: A Background Paper for the Committee on Science, Engineering, and Public Policy, The National Academy of Sciences. Berkeley, CA: Author.

99. Hodgkinson, H. L. All One System: Demographics of Education, Kindergarten through Graduate School. The Institute for Educational Leadership, Inc.

100. Hudson Institute. (1985). Vocational and Technical Education Trends and Priorities: An In-Depth Analysis of the Employment and Training Requirements of Our Rapidly Changing Economy (Prepared for the State of Indiana).

101. Hughes, R. P. (1984). Excellence in vocational teacher education. In J. H. Magisos (Ed.), Excellence in Vocational Education: Four Levels, Four Perspectives. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, National Center for Research in Vocational Education, The Ohio State University.

The status of teacher education is reviewed. The impact of present conditions on means of educating vocational teachers is examined. Suggestions are offered for achieving excellence in vocational teacher education programs.

102. Hull, D. M. (1985, April 25). A New Role for Vocational Education. Presentation to the National Association of State Directors of Vocational Education. Waco, TX: Center for Occupational Research and Development.

This transcript of a presentation by Daniel M. Hull, President, The Center for Occupational Research and Development, Waco, Texas, covers the topics of accomplishments of vocational education during the past 25 years, what is causing things to change, where our schools are headed, applied foundation courses for careers, a newly - developed applied foundation course in physics titled Principles of Technology; and vocational education's new role.

103. Human Resources Division United States General Accounting Office. (1986, March). Job Training partnership Act: Data Collection Efforts and Needs (Briefing Report to the Chairman, Subcommittee on Employment Opportunities, Committee on Education and Labor, House of Representatives). Washington, DC: Author.

104. Illinois State Board of Education. (1983). Education for Employment Policy Study: A Preliminary Report. Springfield, IL: Author.

105. Illinois State Board of Education. 91983). Education for Employment Policy Study: Part II A Report and Recommendations. Springfield, IL: Author.

106. Imel, S. (1984). Excellence in adult vocational education. In J. H. Magisos (Ed.), Excellence in Vocational Education: Four Levels, Four Perspectives. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, the National Center for Research in Vocational Education, The Ohio State University.

This paper examines the relationship of the reports on educational excellence to adult vocational education and delineates factors that contribute to excellence in adult vocational education.

107. *Industrial Recruitment and the Path of North Carolina's Economic Development to the Year 2000: A Public Discussion Paper for North Carolina's Project 2000*. (1982). Raleigh, NC: North Carolina Department of Labor.

108. *Investing in Our Children, Business and the Public Schools: A Statement by the Research and Policy Committee of the Committee for Economic Development*. (1985). Washington, D.C.: Committee for Economic Development.

This report discusses: 91) employability: student needs, business needs, (2) investment strategies in education, (3) teachers and schools, and (4) business and the schools: shared goals, common interests. Recommendations related to these areas are given.

109. *An In-Depth Study of Vocational Education in Rhode Island: Final Technical Report* (Submitted to Rhode Island State Advisory Council for Vocational Education). (1985). Tallahassee, FL: MGT of America, Inc. This report on vocational education in Rhode Island includes: (1) a description of a recent study of vocational education in Rhode Island, (2) a chapter giving a historical perspective, (3) a national synopsis of vocational education today, and (4) recommendations and implications.

110. Jewell, L. R. (1980). *A Study of Supply and Demand of Vocational Education Personnel in North Carolina: Past Trends and Future Impacts*. Raleigh, NC: North Carolina State University.

111. Karmin, M. W. (December 23, 1985). Jobs of the future. *U.S. News and World Report*, pp. 40-44.

112. Kearns, D. T. (1986, October 6). It's schools', not business', job to offer basic education. *Los Angeles Times*, p. 23.

113. *Keeping Vocational Education at Work: A Report of the Blue Ribbon Committee on Secondary Vocational Education in Ohio* (Submitted to Superintendent of Public Instruction Franklin B. Walter). (1984, September). Columbus, OH: State of Ohio Department of Education.

A blue ribbon committee was appointed by the Ohio State Superintendent and asked to set forth a clearly defined statement of purpose for vocational education at the secondary level and to propose appropriate adjustments in programming, scheduling, funding and delivery options for vocational education at the secondary level. This report contains the resulting definitions and recommendations.

114. Key provision in new law reforms vocational education: Focus is on broader knowledge and experience for students/workers. (1985, July). *Center for Law and Education, Inc. D.C. Report*, pp. 1-5.

115. Latta, E.M. (1985). The North Carolina Story. Raleigh, NC: State Advisory Council on Vocational Education.

The history of vocational education in North Carolina is reviewed. Special emphasis is given to the period from 1976 to 1985.

116. Latta, E. M. (Undated). Who's in Charge of the Public Schools? Raleigh, NC: State Advisory Council on Education.

117. Lawrence, J.E.S. (1986). Issues in State and Local Governance. (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D. C.: U.S. Department of Education.

118. Levin, H. M., & Rumberger, R. W. (1985). Choosing a proactive role for education. IFG Policy Perspectives. Stanford, CA: Institute for Research on Education Finance and Governance, Stanford University, School of Education.

These authors build a case for their position that future requirements of work suggest that the best preparation should be general rather than specific education and training, one that stresses flexibility and adaptability.

119. Lindeman, A. State Concerns in the Future Development of Vocational Education (Occasional Paper No. 98). (1984). Columbus, OH: National Center for Research in Vocational Education, The Ohio State University.

This report consists of a presentation by The Honorable Anne Lindeman, Arizona State Senator. The presentation is followed by an interview of Ms. Lindeman. In her presentation, she proposes that the demand for more money as the solution to the present educational crisis apart from fundamental changes in how we educate is highly suspect based on past experience and makes suggestions for future directions.

120. Loadman, W. E. (1986, April). Comparison Study of Vocational and Traditional Students on Mathematics and Science Achievement (Technical report submitted to the Ohio Department of Education Division of Vocational and Career Educaiton in partial fulfillment of research grant). Ohio State University.

121. Looking ahead: Jobs and education in the future. (1985). The School Administrator, pp. 10-12.

122. McPartland, J. M., Dawkins, R. L., & Braddock, J. H., (1986). The School's Role in the Transition from Education to Work: Current Conditions and Future Prospects (Report No. 362). Baltimore, MD: Center for Social Organization for Schools, The John Hopkins University.

This report examines the role played by schools in preparing students for employment directly after high school graduation and assisting them through the career process.

123. McKinney, T. H. Strategies for Improving Quality in Vocational Technical, and Occupational Education. Ann Arbor, MI: Center for the Study of Higher and Postsecondary Education at the University of Michigan.

This paper addresses the issues related to the requirement by Carl D. Perkins Vocational Education Act that each state designate or establish a sole state agency for administration or supervision of programs in vocational education at both secondary and post secondary institutions.

124. Magisos, J. H. (1984). Excellence in secondary vocational education. In J.H. Magisos (Ed.), Excellence in Vocational Education: Four Levels, Four Perspectives. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, The National Center for Research in Vocational Education, The Ohio State University.

The relationship of the reports on educational excellence and secondary vocational education is examined and an agenda for action is suggested.

125. Maine Bureau of Vocational Education, Department of Educational and Cultural Services. (1985). New Directions for Technology Education. Augusta, MN: Author.

This research/idea paper was designed to stimulate innovative thinking inside the vocational education community. It presents "ideas that could be used, as a basis for future planning, as well as some controversial ideas that need refinement."

126. Meyer, R. H. (1981). An Economic Analysis of High School Vocational education, IV. The Labor Market Effects of Vocational Education, Washington, D.C.: The Urban Institute.

127. Miller, M. D. Principles and A Philosophy for Vocational Education (Special Publication Series No. 48). (1985). Columbus, OH: The National Center for Research in Vocational Education of the Ohio State University.

This book identifies and analyzes the underlying principles of vocational education and uses them as a basis to offer a philosophical position for vocational education that reflects human and economic needs, a contemporary knowledge base, and the values inherent in our society.

128. Miller, W. R., West, L.L., & Ryan, R. D. (1984). Vocational Education Trends and Priorities: A Study of Vocational Education in Missouri (Report Prepared for State of Missouri Department of Elementary and Secondary Education Division of Career and Adult Education). Jefferson City, MO: Department of Elementary and Secondary Education, Division of Career and Adult Education.

This report summarizes the outcome of three separate survey studies conducted in 1984 to address three major topics: (1) priorities in vocational education; (2) collaboration between vocational education and the world of work; and (3) indicators of needed program adjustments in vocational education. Groups surveyed were: (1) students; (2) vocational educators, and (3) employers.

129. Models for Articulation with Public Schools. (Undated). (Available from the North Carolina Department of Community Colleges, Raleigh, NC).

130. National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. (1984). High Schools and the Changing Workplace: The Employer's View (Report of the Panel on Secondary School Education for the Changing Workplace). Washington, D.C.: National Academy Press.

The objective of this report was to identify, from the employer's perspective, the basic education needed for effective, upwardly mobile, lifelong participation in the American work force. The report addresses questions such as present and future job opportunities for high school graduates and the likely requirements for such jobs as well as the means for producing high-quality graudates.

131. National Commission on Secondary Vocational Education. (1985). The Unfinished Agenda: The Role of Vocational Education in the High School. (Funded by the U.S. Department of Education, Office of Vocational and Adult Educaiton), Columbus, OH: National Center for Research in Vocational Education. The Ohio State University.

For over 7 months the Commission examined vocational education. Site visits and hearings across the country were conducted by teams and individual commissioners. Reams of written testimony were solicited and received. This report contains the results of these activities. Recommendations are organized under the following headings: (1) access, (2) standards and accountability, (3) articulation, (4) leadership, (5) business, labor, and community, and (6) field-based learning.

132. National Study of Vocational Education Systems and Facilities. Volumn 1: Technical Report (Prepared for the Office of Planning, Budgeting, and Evaluation, U.S. Office of Education). (1978). Rockville, MD: Westat, Inc. and Silver Spring, MD: Institutional Development Associates, Inc.

The report, divided into three parts, provides a description of some of the major characteristics of the vocational education systems of the 56 States and Territories. The parts are: (1) Organization, Governance, and Financing of Vocational Education Systems, (2) Description of Vocational Education Institution Operating Characteristics and Facility Utilization, and (3) Planning Activities of State and Local Agencies.

133. Nation's schools must balance liberal arts, vocational studies: An interview with Dale Parnell. (1985, September). Vocational training News, pp. 5-6.

This article briefly presents a proposal for high schools and community colleges to create "tech prep" programs, much like the "college prep" curriculum taught in many high schools.

134. The Nature of Secondary Voc. Ed. (Available from Dan Dunham, Executive Director, The Oregon Alliance for Program Improviement, School of Education, Oregon State University, Corvallis, OR 97331.)

This paper contains the answers of outstanding leaders in vocational education to the question: What will (or should) high school programs look like in, say 2010?

135. North Carolina Board of Education Controller's Office. North Carolina Public Schools Statistical Profile 1986. Raleigh, NC, 1986.

136. North Carolina Board of Science and Technology. (1984, January). New Challenges for a New Era: Progress Through Innovation, Education, and Research in North Carolina Volume I: A Vision of Opportunity (Final Report of the Governor's Task Force on Science and Technology). Raleigh, NC: Office of the Governor.

137. North Carolina Board of Science and Technology. (1984, January). New Challenges for a New Era: Progress Through Innovation, Education, and Research in North Carolina Volume II: Economic Revitalization through Technological Innovation (Final Report of the Governor's Task Force on Science and Technology). Raleigh, NC: Office of the Governor.

138. North Carolina Board of Science and Technology. (1984, January). New Challenges for a New Era: Progress Through Innovation, Education, and Research in North Carolina Volume III. Research and Higher Education: Building a Foundation for Innovation (Final Report of the Governor's Task Force on Science and Technology). Raleigh, NC: Office of the Governor.

139. North Carolina Board of Science and Technology. (1984, January). New Challenges for a New Era: Progress Through Innovation, Education, and Research in North Carolina Volume IV: Public Education and Technological Challenge (Final Report of the Governor's Task Force on Science and Technology). Raleigh, NC: Office of the Governor.

140. North Carolina Community College System, (1985). Annual Enrollment Report: Student Enrollment and Full-Time Equivalents, 1984-85. (Volume 20). Raleigh, NC: Author.

141. North Carolina Community College System. Catalog: The 1984-85 Educational Guide. Raleigh, NC: North Carolina Department of Community Colleges.

142. North Carolina Community College System. (1985, June). Chart: The 1985-86 Educational Guide. Raleigh, NC: North Carolina Department of Community Colleges.

143. North Carolina Department of Community Colleges. (1986). Articulation with Public Schools. Raleigh, NC: Author.

This paper presents the rationale for increased articulation between the Community College System and public schools. Several models which can be employed to achieve this are described briefly in attachments.

144. North Carolina Department of Community Colleges. (1985). Job Training Partnership Act: State Education Coordination and Grant Funds (8% - JTPA), 1985/86 Proposed Projects. Raleigh, NC: Author.

Proposed North Carolina JTPA (8%) projects for 1985/86 are listed and briefly described.

145. North Carolina General Assembly Joint Legislative Commission on Governmental Operations: Vocational Education Study. (Undated). Education Reforms in North Carolina and Impact on Vocational Education in the High School. Raleigh, NC: Author.

This paper briefly reviews the impact of recent legislated educational reforms on vocational education at the high school level. Specific legislation reviewed includes the kindergarten program; primary reading program; annual testing program; competency testing program; Creech bill for exceptional education; career ladder, performance appraisal; quality assurance; basic education program; competency based curriculum; extended day program; Job Training Partnership Act programs; upgrading high school graduation requirements, instructional time, promotion standards; materials, equipment, staffing, etc.; vocational readiness programs, grades 7-8; and teacher effectiveness.

146. North Carolina Standard Course of Study and Introduction to the Competency-Based Curriculum. (1985). Raleigh, NC: North Carolina Department of Public Instruction and State Board of Education.

147. North Carolina State Advisory Council on Vocational Education. (1984). Building for the Future. (Annual Report). Raleigh, NC: Author.

148. North Carolina State Advisory Council on Vocational Education. (Adopted 1986, February). Charting the Future: Students Should be Able to Satisfy High School Graduation Requirements with Appropriate Vocational Courses. Raleigh, NC: Author.

In this two-page paper the North Carolina State Advisory Council on Vocational Education recommends that the State Board of Education require as a matter of statewide policy that students be able to satisfy high school graduation requirements with appropriate vocational courses.

149. North Carolina State Advisory Council on Vocational Education. (1985, July). A Compendium of Reports, Policy Statements, Studies, and Other Activities Since 1961. Raleigh, NC: Author

This compendium is divided into 2 parts: (1) the recommendations developed by the State Council in 15 annual reports in the period from 1970 through 1984, with the response from the State Board of Education and the State Board of Community Colleges, and (2) a listing of other reports, studies, and statements which have been developed by the State Council

150. North Carolina State Advisory Council on Vocational Education. (1982). Isn't It Time? (Annual Report). Raleigh, NC: Author.

151. North Carolina State Advisory Council on Vocational Education. (1986). A New Beginning. (Annual Report). Raleigh, NC: Author.

152. North Carolina State Advisory Council on Vocational Education. (1983). The Next Move. (Annual Report). Raleigh, NC: Author.

153. North Carolina State Advisory Council on Vocational Education. (1982). 1968 Recommendations Need Action (Adopted as a Special Report by the State Advisory Council on Education, November, 1982). Raleigh, NC: State Advisory Council on Education.

This report notes that in spite of changes and the passage of time, most of the problems identified in a report on Occupational Education released by the Commission in 1968 remain, and many of the 53 recommendations are still relevant. This report contains a reprint of the 1968 report, along with the Council's recommendation that it be examined by the appropriate State boards.

154. North Carolina State Advisory Council on Vocational Education. (Adopted 1984, August). Public Funding for Education in North Carolina: An Examination and Comparison of Public Funding for Education in North Carolina with Pupil Enrollment Data and Other Financially Related Patterns and Trends Over the Past Twenty Years. Raleigh, NC: Author.

The major purposes of the inquiry reported in this paper were to answer these questions: (1) Has the General Assembly been evenhanded in its appropriations to the various educational levels over the years; (2) has one level of the education section benefited financially at the expense of another level of education over time?

155. North Carolina State Advisory Council on Vocational Education. (Adopted 1986, February). The State Advisory Council on Vocational Education Recommends that the Name and Role of the North Carolina School of Science and Mathematics Be Expanded: A Recommendation to the Governor, the Board of Governors, and the Board of Trustees of the North Carolina School of Science and Mathematics, The Business Community, and the Public. Raleigh, NC: Author.

In this one-page paper the State Advisory Council on Vocational Education recommends that the name and role of the North Carolina School of Science and Mathematics be expanded to include "technology."

156. North Carolina State Advisory Council on Vocational Education. (Adopted 1986, February). The State Advisory Council on Vocational Education Recommends that the State Board of Community Colleges Broaden the Scope of the Program for New or Expanding Industries to Include Newly Created Service As Well As Manufacturing Jobs. Raleigh, NC: Author.

This two-page paper contains the North Carolina State Advisory Council on Vocational Education's recommendation that the State Board of Community Colleges broaden the scope of the program for new or expanding industries to include newly created service as well as manufacturing jobs.

157. North Carolina State Advisory Council on Vocational Education. (Adopted 1986, February). The State Advisory Council on Vocational Education Recommends that the State Board of Community Colleges Encourage Local Community College Institutions to Give Special Attention to the Need for Trained Individuals for the Food Preparation and Service Occupations and to Adopt the Following Strategies to Support the Efforts of Local Institutions. Raleigh, NC: Author.

In this one-page paper, the State Advisory Council on Vocational Education recommends that the State Board of Community Colleges urge local community college institutions to give special attention to the need for individuals for the food preparation and service occupations and to adopt four listed strategies to support the efforts of local institutions.

158. North Carolina State Advisory Council on Vocational Education, (Adopted 1986, February). The State Advisory Council on Vocational Education Recommends that the State Board of Community Colleges Require the Small Business Centers to Offer Appropriate Assistance, Including Seminars, to Public School Vocational Education Personnel. Raleigh, NC: Author.

This two-page paper discusses the reasons for the State Advisory Council on Vocational Education's recommendation that the State Board of Community Colleges require the Small Business Centers to offer appropriate assistance to public school vocational education personnel.

159. North Carolina State Advisory Council on Vocational Education. (1986, February). A Statement to the Board of Governors Task Force on The Preparation of Teachers (Adopted). Raleigh, NC: Author.

This statement contains ten recommendations regarding the overall topic of teacher preparation, with special emphasis on the needs of preparing vocational education teachers. The recommendations were made by invitation to the State Advisory Council on Vocational Education to the Board of Governors Task Force on the Preparation of Teachers.

160. North Carolina State Advisory Council on Vocational Education. (1981). A Time to Determine (Annual Report). Raleigh, NC: Author.

161. North Carolina State Advisory Council on Vocational Education. (1981). A Year of Transition (Annual Report). Raleigh, NC: Author.

162. North Carolina State Board of Education. Accountability Report for Vocational Education, Fiscal Year 1985. (Undated). Raleigh, NC: Author.

The purpose of this Accountability Report is to show the extent to which the State has achieved the goals and objectives included in the Annual State Plan for Vocational Education for FY 1985. The report is required by federal regulations.

163. Occupational Demand and Selected Institutional Supply, June "86" (Draft). Raleigh, NC: North Carolina Occupational Information System.

164. Occupational Education for the Public Schools of North Carolina (A Supplementary Report of the Governor's Study Commission on the Public School System of North Carolina). (1968). Reprinted by the State Advisory Council on Education as part of 1968 Recommendations Need Action. Raleigh, NC: State Advisory Council on Education.

165. Office of State Budget and Management. (1986). State Administered Employment and Training Programs: An Inventory of JTPA Related Programs. Raleigh, NC: Author.

166. Oklahoma Area Vocational-Technical Schools: Rules and Regulations, 1983. (1983). Adopted by the Oklahoma State Board of Vocational and Technical Education.

167. Overton, R. J. (1985). North Carolina Community College System Small Business Centers Progress Report II, February 16, 1985 - June 30, 1985. Raleigh, NC: North Carolina Department of Community Colleges.

168. Parker, C. B., Jr. (1986). Forum, 1986: A Report of the 1986 Vocational Education Week Meetings. Coordinated by the North Carolina Advisory Council on Vocational Education.

169. Parnell, D. (1986). The Neglected Majority. The Community College Press.

170. Parnell, Dale. (1984). 2+2 Tech Prep/Associate Degree Program: A Working Degree for America. American Association of Community and junior Colleges.

This concept paper was written by the President of the American Association of Community and Junior Colleges. The contents include a scenario for the future of work, the press of present circumstances, 2+2 tech prep/associate degree program - a partnership America needs, a tech-prep fact sheet, help wanted ads of the future. The appendix contains four sample of curricula for articulated programs.

171. Patton, H. M., Foster, J.D., Brizius, J.A., & Foster, S.E. (1983). An Agenda for the Board of Vocational and Technical Education (Prepared for the Mississippi Board of Vocational and Technical Education). Lexington, KY: State Research Associates.

This study emphasized management and program changes which would establish new directions and clarify existing practices for vocational and technical training in the State of Mississippi. The recommendations are divided between changes in management capacity and changes in the quality of programs.

172. Peterson, P. E. (1986). Coordination of Vocational Education and Manpower Training Programs (A paper prepared for the Design conference for the National Assessment of Vocational Education). Washington, D.C.: U.S. Department of Educaiton.

173. Phelps, L. A. Evaluating the Access and Equity of the Carl D. Perkins Vocational Education Act of 1984 (A paper prepared for the Design Conference for the National Assessment of Vocational Education, Preliminary Draft). Washington, D.C.: U.S. Department of Education.

174. Piland, W.E. (1982). Project: Three Phase, An Evaluation of the Three Phase Evaluation System for Vocational Education in Illinois, Executive Summary. Springfield, IL: Advisory Council on Adult, Vocational, and Technical Education.

PROJECT: THREE PHASE was an evaluation of the Illinois State Board of Education, Department of Adult, Vocational, and Technical Education's Three-Phase System of evaluation for vocational education. This report outlines the project objectives, activities, and findings of the evaluation.

175. The Planning Papers for the Vocational Education Study, Publication No. 1. (1979). Washington, D.C.: U.S. Department of Health, Education, and Welfare, and the National Institute of Education.

This document contains 14 of the papers commissioned by the National Institute of Education in preparation for the Vocational Education Study mandated by the Education Amendments of 1976 (P.L. 94-482). The three parts of the report are: (1) selected features of a federal grant-in-aid program, (2) quantitative scores, and (3) issues in program evaluation.

176. Pyle, R. B. (1986). Position Paper: The State of Vocational and Technical Teacher Training in North Carolina. Greensboro, NC: North Carolina Agricultural and Technical State University.

This paper explains the past, present, and future trends of vocational-technical teacher training in North Carolina. The relationships among agencies that shared in the process or product of vocational-technical teacher training are delinated. Barriers to effective personnel development are listed. A model of vocational-technical education personnel development delivery system is presented and future implications are discussed.

177. Reassessing vocational education programs. (1986). Southern Growth, 13(4), 1.

This article summarizes the results of a conference on education and the economy sponsored by the Southern Growth Policies Board and the Carnegie Form.

178. The Report of the Governor's Study Commission on the Public School System of North Carolina. (1968). Raleigh, NC: The Governor's Study Commission on the Public School System of North Carolina.

179. Research Section, Office of State Budget and Management. (1985, May). Description of the North carolina Economic Model. Raleigh, NC: Author.

180. Robinson, S. (1984, June). Equity and vocational education. In Setting Goals for Vocational Education: A Panel Discussion of Vocational Education Policy in the South before the Executive Committee of the Southern Growth Policies Board. Panel discussion conducted in Atlanta, GA. Research Triangle Park, NC: Southern Growth Policies Board.

The presenter, Director of Education for the National Urban League, discussed equity goals, targeting resources to special needs populations, and the use of equity set-asides in vocational education.

181. The Role of Vocational Education in North Dakota's Secondary Schools: An Executive Summary of a Report Submitted to the North Dakota State Advisory Council for Vocational Education. (1984). Scottsdale, AZ: Ray Ryan and Associates.

This report summarizes the findings and recommendations resulting from a study conducted to help provide direction in determining the role of vocational education in the secondary schools of North Dakota.

182. Rosenfeld, S. Changes and Choices: A Review of Technology's Impact on Vocational Education in the High School (Prepared for Conference on "Technology, the Economy, and Vocational Education" conducted in Little Rock, AR). (1986). Research Triangle Park, NC: Southern Growth Policies Board.

This paper reviews four important junctions in vocational education history that demonstrates the impact of technology on schools and discusses how vocational education has responded at each of the junctures. Options for future policy considerations conclude this paper.

183. Rosenfeld, S. (1984, June). Choosing among goals for vocational education. In Setting Goals for Vocational Education: A Panel Discussion of Vocational Education Policy in the South before the Executive Committee of the Southern Growth Policies Board. Panel discussion conducted in Atlanta, GA. Research Triangle Park, NC: Southern Growth Policies Board.

This presentation introduced three alternative goals for state vocational education programs and discussed implications of each.

184. Rosenfeld, S. (1986) Determination of Excellence in Vocational Education (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D.C.: U.S. Department of Education.

185. Rosenfeld, S. A. (1983, August). The Future of Work for the High School Graduate. Prepared for the Committee on Science, Engineering and Public Policy of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

186. Rosenfeld, S. Vocational Education and Economic Growth Connections and Conumdrums (Occasional Paper No. 112). (1986). Columbus, OH: The National Center for Research in Vocational Education. The Ohio State University.

The author, Director of Research and Programs, Southern Policies Growth board, discusses (1) a variety of connections between vocational education and economic growth and their underlying theoretical foundations, (2) the historical context in which the connections were shaped, (3) policy initiatives that were stimulated by the various connections, and (4) future vocational education policy issues to be resolve in order to maximize the effects of vocational education on economic growth.

187. Secondary and Community College Curriculum Articulation. (1986, July). Available from the North Carolina Department of Community Colleges, Raleigh, NC.

188. Semple, N. M. Vocational Education: The Missing Link? (Background paper used to inform the Research and Policy Committee of the Committee for Economic Development for the preparation of their 1985 report, "Investing in Our Children.") (1985). Washington, D.C.: Committee for Economic Development.

Asserting that the general conclusion is that by whatever measure used, secondary vocational education meets neither the needs of students nor the needs of employers, the author discusses three causes and discusses several solutions.

189. Sewall, G. T. Vocation Education: Problems and Possibilities. (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D.C.: U.S. Department of Education.

190. South Carolina Council on Vocational and Technical Education. (1985). A Study of Vocational Education Report No. 1. Vocational Education: Its Programs and Students. Columbia, SC: Author.

The first in a series of seven reports to the South Carolina General Assembly, this report provides an overview of major national and state issues regarding vocational education in grades 9-12, and the structure and operation of the system (programs, schools, administration, etc.). State-wide information about enrollment patterns, and a profile of students who enroll in vocational education are also provided. Additionally, several recommendations proposed by the State Council are included.

191. South Carolina Council on Vocational and Technical Education. (1985). A study of Vocational Education. Report No. 2. What Students Say About Vocational Programs. Columbia, SC: Author.

The second in a series of seven reports to the South Carolina General Assembly, this report describes a study of South Carolina student's perceptions of and experiences with the vocational system. Based on the findings of the study, the State Council proposed several recommendations, which are discussed.

192. South Carolina Council on Vocational and Technical Education. (1986). A Study of Vocational Education. Report No. 3. Vocational Education and the Low Achieving Student. Columbia, SC: Author.

The third in a series of seven reports to the South Carolina General Assembly, this report addresses the issue of how vocational education can best meet the needs of low achieving students who do not pursue post-secondary education. The Council's recommendations, which are included in the report, are based largely on the findings from a statewide survey of approximately 350 vocational center directors, guidance and placement personnel, and vocational teachers.

193. South Carolina Council on Vocational and Technical Education. (1986). A Study of Vocational Education: Report No. 5. What Employers Say About Vocational Education in South Carolina. Columbia, SC: Author.

This report summarizes the results of a mail survey of over 1200 South Carolina employers regarding their perceptions of an experiences with vocational education, its graduates, and entry-level workers.

194. South Carolina Council on Vocational and Technical Education. (1986). A Study of Vocational Education: Report No. 6. The Student Data System in Vocational Education: Capabilities and Recommended Improvements. Columbia, SC: Author.

This report describes the current student data system in vocational education with regard to its capability to provide information on enrollments, completions, and placements from vocational programs, and the effects of participation in vocational education. Recommendations for expanding the research and management potential of vocational education's information system conclude the report.

195. South Carolina Council on Vocational and Technical Education. (1986). A Study of Vocational Education Report No. 7 Meeting Future Challenges in Vocational Education: Recommendations for Action. Columbia, SC: Author.

This is the final in a series of seven reports to the South Carolina General Assembly. It is an attempt by the study gorup to put the various findings and conclusions into perspective, and relate them to the borader context of economic and social changes. Nine overall recommendations for action conclude the report.

196. Southern Regional Education Board's Commission for Education Quality. (1985). *10 Recommendations for Improving Secondary Vocational Education*. Atlanta, GA: Southern Regional Education Board.

Four of the ten recommendations in this paper are strategies that suggest the role of vocational education as a full partner in improving the academic skills of the region's high school students; an additional two of the ten recommendations are directed to developing pilot programs; and the remaining four recommendations suggest actions which will help to prepare students for a highly technological society, and to fill shortages of technical and skilled workers.

197. State Board of Education. (1985). *North Carolina State Plan for Vocational Education, Three Year Plan, Fiscal Years 1986-1988*. Raleigh, NC: Author.

This document contains the Three Year Program Plan for the program year beginning July 1, 1985 for the administration of Vocational Education under the Carl D. Perkins Vocational Education Act of 1984, including North Carolina planned uses of federal funds for the fiscal years and eight related appendices.

198. State Goals and Policy Board. *NC 2000: Strategies for the Future*. (1983 Recommendations). (1983, November). Raleigh, NC: Department of Administration.

199. State of Missouri Department of Elementary and Secondary Education, Division of Career and Adult Education. (1984). *Reaching for Excellence in Education, Vocational Education Trends and Priorities: A Study of Vocational Education in Missouri Final Report of the 1984 Vocational Study Committee.* Jefferson City, MO: Author.

This final report addresses and makes recommendations to vocational education for three major areas: (1) labor market needs, (2) the scope and nature of vocational and technical education, and (3) funding patterns.

200. *The States' Excellence in Higher Education Commissions: Who's Look Out for At-Risk Youth* (Prepared for the Charles Stewart Mott Foundation). (1985, Fall). Chapel Hill, NC: MDC, Inc.

The report presents the results of a survey which "attempted to answer one central question: whether, on the whole, the educational excellence commissions established in the states over the last few years have paid attention to the at-risk youth who may make up as much as one-third of all high school students." The report concludes that "the answer is no." Four recommendations for remedying this situation are made.

201. Stern, D. (1985). *Reconstituting Vocational Education*. Berkeley, CA: University of California.

202. Stevens, D. W. Vocational Education and Economic Development (A paper prepared for the Design Conference for the National Assessment of Vocational Education, First Draft). Washington, D.C.: U.S. Department of Education.

203. Struck, J. W. (1986). State Requirements for Offering Specific Vocational Education Programs by State (For the National Center for Educational Statistics, U.S. Department of Education, Washington, D.C.). Camp Hill, PA: National Association of State Directors of Vocational Education.

This study addresses the following questions: (1) Which of the major vocational education programs are operated with the states? (2) Are the programs approved at the state level? (3) Do state standards exist for determining specific program approvals? (4) Do state guidelines exist for determining specific programs approvals? (5) Do states require that a specified number of courses be included in specific programs? (6) Do states require that a minimum number of instructional hours be included for courses?

204. A summary of issues in vocational education. (Undated). SREB. (Available from Southern Regional Education Board, 1340 Spring Street, N.W., Atlanta, GA 30309)

205. Swanson, G. I. 91982). Is high school the place for vocational education? Voc Ed, 57(6).

206. Task Force on Vocational Education for Economic Growth. (1985). Vocational Education: Making It Work. Richmond, VA: Commonwealth of Virginia Department of Education.

This report contains the fifteen recommendations of a Task Force on Vocational Education for Economic Growth, appointed in 1983 by the Virginia State Superintendent of Public Instruction.

207. Taylor, R. E. Vocational Education--Opportunity and Challenge (A paper prepared for the Design Conference for the National Assessment of Vocational Education). Washington, D.C.: U.S. Department of Education.

208. Tennessee Task Force for Secondary Vocational Education. (1983). Secondary Vocational Education Task Force Report. Nashville, TN: Author.

This report focuses on the recommendations made by the Tennessee Task Force for Secondary Education regarding the organization and function of secondary vocational education in Tennessee. Ten major issues are addressed, including the role and scope of secondary vocational education, career counseling, graduation requirements, and articulation with post-secondary training.

209. Test update: college admissions scores a mixed message. (1986, September). Education USA, 37.

210. Tuttle, F. (1984, June). Economic development and vocational education. In Setting Goals for Vocational Education: A Panel Discussion of Vocational Education Policy in the South Before the Executive Committee of the Southern Growth Policies Board. Panel discussion conducted in Atlanta, GA. Research Triangle Park, NC: Southern Growth Policies Board.

Several strategies implemented by vocational education in the State of Oklahoma to encourage continued revitalization of the economy were described.

211. Update on the vocational education commission: A preview of commission findings and recommendations. (1986). Florida Vocational Journal, 11(5), 4-6.

Florida Commission on Vocational Education member, Gerrit J. Knodt, of Citicorp Services, Inc., presented a preview of the commission's findings and recommendations to the Vocational Deans, Directors, and Teacher Educators. This article is a transcript of Knodt's remarks.

212. Vocational Education Department. (1986, January). Recommendations for Vocational Education in North Carolina. Charlotte, NC: Charlotte-Mecklenburg Schools.

This paper discusses and makes recommendations for the following facets of vocational education: purposes, what is taught, who is served, when vocation education is offered, where it is offered, who teaches vocational education, and how vocational education is governed.

213. Vocational Education Programs in Serious Trouble--Scott Announces Major Community College System Initiative to Tackle Problem. (1986, February) [Newsrelease]. Raleigh, NC: North Carolina Department of Community Colleges.

This news release contained (1) a transcript of an address titled " The Future of Vocational Education in North Carolina" given by Robert W. Scott, State President, North Carolina Department of Community Colleges, to the Raleigh Chamber of Commerce on February 13, 1986; (2) "A Statement of Direction for Vocational and Technical Education," which was adopted in February 1986 by the State Board of Community Colleges and the State Board of Education; (3) a "Fact Sheet: Where Do The Kids Go?;" (4) a summary of "North Carolina Occupational Forecasts for 1985 through 1990 for Selected Occupational Clusters;" (5) an excerpt from "The Economy in 1995," Occupational Outlook Quarterly, Spring, 1984; and (6) a general information sheet on the North Carolina Community College System.

214. The Vocational Education Study: The Interim Report, Publication No. 3. (1980) Washington, D.C.: U.S. Department of Education, Office of Education Research and Improvement, and National Institute of Education.

This document reports on the progress of the National Institute of Education Vocational Education Study mandated by the Education Amendments of 1976. (P.L. 94-482).

215. The Vocational Education Study: The Final Report, Publication No. 8. (1981) Washington, D.C.: U.S. Department of Education, Office of Education Research and Improvement, and National Institute of Education.

This document reports findings of the studies on vocational education that the Education (Amendments of 1976 (P.L. 94-482) directed the National Institute of Education to conduct.

216. Wake County Public Schools. (1986). A Brief Profile of Vocational Education in the Wake County Public Schools, 1985-86. Raleigh, NC: Author.

217. Walton, M.S., & McNeill, G.A. (1980, July). An Examination of Evaluation and Practices in Other Agencies; Department of Correction, Human Resources, and Labor (No. 3). Raleigh, NC: State Advisory Council on Education.

This paper examined federal and State laws specifically applicable to the evaluation of programs and the response by the Departments of Correction, Human Resources, and Labor. It also looked at the coordination of programs across agency lines.

218. Walton, M.S., & McNeill, G.A. (1980, May). An Examination of Federal and State Laws Requiring Evaluation of Vocational Education and Employment Training: How North Carolina Agencies Are Complying (No. 2). Raleigh, NC: North Carolina State Advisory Council on Education.

This paper examined federal and State laws to determine what is required in evaluating both vocational education and employment training. It then examined how government agencies have planned for evaluation and how they are, in fact, using those plans.

219. Walton, M.S., & McNeill, G.A. (1980, September). Findings and Recommendations from the JAVEES Study (No. 4).

This is the fourth and final paper developed in the JAVEES (Joint Assessment of the Vocational Education Evaluation System) project by the State Advisory Council on Education through a contract with the State Employment and Training Council. It presents a summary of evaluation activities which occurred during the project year and recommendations based upon the year's study.

220. Walton, J. S., & McNeill, G.A. (1980, February). A Preliminary Assessment of the Evaluation of the Vocational Education and Employment Training Enterprise in North Carolina (No. 1). Raleigh, NC: North Carolina State Advisory Council on Education.

This paper reports the results of a survey of State agencies in North Carolina who have responsibility for providing direct services or for funding programs in vocational education/employment skills. Results were used to indicate where the State is and where it might go to make the employment training programs more effective.

Appendix C

Names and Titles of Interviewed Personnel

1. Michael Aheron, State-Wide Planner, Division of Employment and Training North Carolina Department of Natural Resources and Community Development
2. Sylvia Anderson, Co-Director of Vocational Education, Durham County School System
3. George Ake, North Carolina Highway Patrol Training Center, North Carolina Department of Crime Control and Public Safety
4. June Atkinson, Associate Director, Program Development Section, Division of Vocational Education, North Carolina Department of Public Instruction
5. George Autry, President, MDC, Inc.
6. Lattie Baker, Jr., Assistant Secretary for Programs and Personnel Development, North Carolina Department of Correction
7. Gary Barnes, Associate Vice President for Planning, General Administration University of North Carolina
8. Dennis Bartels, Administrative Assistant/Research Consultant, Third Century Project, Z. Smith Reynolds Foundation, Inc.
9. Allen Barwick, Budget Administrator and Director of Management and Information Services, Office of State Budget and Management
10. Dan Baucom, Vocational Education Department, Mitchell County Public Schools
11. Dawn Beasley, Division of Aging, North Carolina Department of Human Resources
12. Clifton B. Belcher, Director, Division of Vocational Education, North Carolina Department of Public Instruction
13. Joe Belnak, Assistant Accounting Manager, Division of Auditing and Fiscal Support, North Carolina Department of Public Instruction
14. Jenny Billings, Accounting Manager, Auditing and Fiscal Support, North Carolina Department of Public Instruction
15. Marie Blackwell, Labor Market Information, Employment Security Commission, North Carolina Department of Commerce

16. Gerry Blackwood, Administrative Assistant, North Carolina Department of Public Instruction

17. Al Boyles, Director, Division of Youth Services, North Carolina Department of Human Resources

18. Earl Bradley, Chief, Labor Resources, Economic Development Group, North Carolina Department of Commerce

19. Donald R. Brannon, Associate Director, Program Improvement, Division of Vocation Education, North Carolina Department of Public Instruction

20. John Brooks, Commissioner, North Carolina Department of Labor

21. Gè Brougden, Division of Social Services, North Carolina Department of Human Resources

22. Dan Bruffey, Chief Consultant, Personnel Development, Division of Vocational Education, North Carolina Department of Public Instruction

23. Linda Burgess, Public Information Office Director, Employment Security Commission, North Carolina Department of Commerce

24. Karen Cafferty, State-Wide Planner, Division of Employment and Training, North Carolina Department of Natural Resources and Community Development

25. Tommy Caldwell, Chief Executive Officer, Carolina Construction Training Council, Member of State Advisory Committee for Trades and Industry Education

26. Brenda Canup, Director of Vocational Education, Kinston City Schools

27. Claude W. Carraway, Jr., State Director of Meat and Poultry Inspection Service, North Carolina Department of Agriculture

28. Don Carrington, Executive Director, North Carolina State Occupational Information Coordinating Committee

29. Roy Carroll, Vice President for Planning, General Administration, University of North Carolina

30. John Chaney, Publication Division, Department of The Secretary of State

31. Ames Christoper, Project Director of JTPA, North Carolina Commission of Indian Affairs

32. William Church, Special Assistant, Secondary Education, Instructional Services, North Carolina Department of Public Instruction

33. Brian Claire, Vocational Education Department, Mecklenburg School System

34. Curtis Clark, Operational Audit Supervisor, Office of State Auditor

35. Joseph Clary, Department Head, Occupational Education, North Carolina State University

36. Larry D. Coble, Superintendent, Durham County School System

37. Marion R. Cochran, General Manager, Brick Association of North Carolina

38. Teri Copeland, Special Assistant JTPA Coordination, Division of Support Programs, North Carolina Department of Public Instruction

39. LeRoy Cornelsen, Division of Vocational Education, U.S. Department of Education

40. Paul Crissman, Acting Director, Division of Budget and Analysis, North Carolina Department of Human Resources

41. Willard Daggett, Director, Division of Occupational Education Programs, New York State Education Department

42. Dennis Davis, Director, Division of Support Programs, North Caroilna Department of Public Instruction

43. Wayne Davis, Division of Motor Vehicles, North Carolina Department of Transportation

44. Willa Dean, Personnel Director, North Carolina Wildlife Resource Commission

45. Glenn Downs, Assistant Director, Labor Market Information Division, Employment Security Commission, North Carolina Department of Commerce

46. Bernell C. Dickinson, Director, Division of Veterans Education and Proprietary School Services, North Carolina Department of Public Instruction

47. Joanne Dutton, Law Enforcement Coordinator, Criminal Justice Education and Standards Commission, North Carolina Department of Justice

48. J.W. Eades, Education Consultant, North Carolina Department of Community Colleges

49. David Eldridge, Assistant Secretary, Director of Economic Development, North Carolina Department of Commerce

50. Nancy Farmer, Special Assistant, Middle Grades, Instructional Services, North Carolina Department of Public Instruction

51. Don Ferguson, North Carolina Department of Public Instruction

52. James L. Forte, Director, Division of Economic Opportunity, North Carolina Department of Natural Resources and Communtiy Development

53. Ken Foster, Community-Based Alternative Programs, Division of Youth Services, North Carolina Department of Human Resources

54. Margaret Gayle, Associate Director, Curriculum Training Fields Forecast, Division of Vocational Education, North Carolina Department of Public Instruction

55. Mabel Gordon, Director of Vocational Education, Orange County School System

56. Jack Glass, Brick Association of North Carolina

57. Joseph P. Graba, State Director, Minnesota State Board of Vocational/Technical Education

58. Henry Gransee, Attorney, Employment Security Commission, North Carolina Department of Commerce

59. Thomas Graves, Executive Director, North Carolina Citizens for Business and Industry

60. James W. Griffith, Executive Director, National Advisory Council on Vocational Education

61. Ben Gross, JTPA Coordinator, U.S. Department of Labor

62. Jane Hall, President-elect, North Carolina Council of Vocational Teacher Education

63. Ray Hannapel, National Science Foundation

64. Danny Hardee, Director of Vocational Education, Wake County School System

65. Margaret Hayden, Special Assistant for Planning and Development, North Carolina Department of Public Instruction

66. Henry Hayes, Division of Social Services, North Carolina Department of Human Resources

67. Katherine Heller, Economist, Research Triangle Institute

68. Barbara Henshaw, Division of Aging, North Carolina Department of Human Resources

69. Robert C. Hinshaw, Chief, Economic Development Section, Division of Community Assistance, North Carolina Department of Natural Resources and Community Development

70. Gary Hobbs, Co-Director of Vocational Education, Durham County School System

71. Dorothy Horrell, Vice President of Instruction for Colorado Community Colleges and Occupational Education, State Board for Community Colleges and Occupation Education System

72. Steve Ijames, Computer Systems Analyst, North Carolina Department of Community Colleges

73. Carolyn L. Jackson, Associate Superintendent, Durham County School System

74. Charles Jeffress, Assistant Commissioner, North Carolina Department of Labor

75. William Johnston, State Director of Vocational Education, Georgia Department of Public Education

76. Ray Johnson, Division of Enforcement, North Carolina Wildlife Resource Commission

77. Felix Joyner, Vice President-Finance, General Administration, University of North Carolina

78. Joe Kiesenhofer, Research Analyst, North Carolina Department of Justice

79. Richard G. Kinton, Assistant Administrator, Division of Motor Vehicles North Carolina Department of Transportation

80. E. Micheal Latta, Executive Director, State Advisory Council on Vocational Education

81. Bryant A. Lindsey, Programs and Personnel Development, North Carolina Department of Correction

82. Ron Lofton, Assistant Director, Operations and Support Services, Division of Vocational Rehabilitation Services, North Carolina Department of Human Resources

83. James McGlinn, University of North Carolina at Asheville

84. Reeves McGlohon, Deputy State Superintendent, North Carolina Department of Public Instruction

85. Shirley McLaurin, Specialist, Division of Certification, North Carolina Department of Public Instruction

86. John Mandaville, Intergovernmental Coordinator, North Carolina Department of Human Resources

87. Betty Oxendine Mangum, Director, Division of Indian Education, North Carolina Department of Public Instruction

88. Tom Meyers, Project Director, JTPA Migrant Workers Project, Telamon Corporation

89. Robert A. Mullen, Deputy Director, Division of Vocational Education, North Carolina Department of Public Instruction

90. Don Murray, Director of Alcohol Law Enforcement, Alcohol Law Enforcement Division, North Carolina Department of Crime Control and Public Safety

91. Van Brock Murray, Assistant Director, Division of Certification, North Carolina Department of Public Instruction

92. M.V. Rains, Research Division, North Carolina Department of Public Instruction

93. Maxine O'Kelly, Assistant Superintendent, Burlington City School System

94. Charles Parker, President, Resource Associates, Inc.

95. Bill Patterson, Training Coordinator, Crime Control and Public Safety, North Carolina Department of Alcohol Law Enforcement

96. William W. Peek, Senior Associate State Superintendent, North Carolina Department of Public Instruction

97. Roy Peters, State Director of Vocational Education, Oklahoma Department of Public Education

98. A. Craig Phillips, State Superintendent of Public Instruction, North Carolina Department of Public Instruction

99. Lon Pierce, Director of Vocational Education, Durham City School System

100. Ken Pittman, Divison of Apprenticeship and Training, North Carolina Department of Labor

101. Jerry Price, Chief of Educational Services, Division of Prisons, North Carolina Department of Public Instruction

102. William Pursell, Director of JTPA Services, North Carolina Department of Community Colleges

103. Robert Pyle, Department of Industrial Education, North Carolina Agricultural and Technical University

104. Jay M. Robinson, Vice President for Public Affairs, General Administration, University of North Carolina

105. John Shepherd, Staff Forrester, Division of Forest Resources, North Carolina Department of Natural Resources and Community Development

106. Martha Stanford, Director, North Carolina Justice Academy

107. Alton Skinner, III, Director of Research, North Carolina Department of Commerce

108. George Shelton, Executive Director, Capital Association of Industries

109. Sanford Shugart, Vice President for Programs, North Carolina Department of Community Colleges

110. Alice Smith, Auditing and Accounting, North Carolina Department of Community Colleges

111. Katherine Baker Smith, Education Program Director, North Carolina Department of Community Colleges

112. Ken Smith, Coordinator for Vocational Education, Center Regional Education Center

113. Meredith Smith, Public Affairs Office, North Carolina Department of Human Resources

114. Robert P. Sorensen, State Director, Wisconsin Board of Vocational/ Technical, and Adult Education

115. Betty Standish, Director of Vocational Education, Mecklenburg School System

116. Melvin Starnes, Manager, Manpower Services, Employment Security Commisison

117. Donald Stedman, Associate Vice President for Academic Affairs, General Administration, University of North Carolina

118. Elaine Stoops, Director, Division of Aging, North Carolina Department of Human Resources

119. Barbara Tapscott, Vice Chairman, North Carolina State Board of Education

120. Ben Taylor, Public Affairs Office, North Carolina Department of Natural Resources and Community Development

121. Sam Taylor, Public Information Office, North Carolina Department of Commerce

122. Jim Tew, Director of Training, Law Enforcement Training, Division of Marine Fisheries

123. Lauren Thompson, Divison of Fire and Rescue Services, North Carolina Department of Insurance

124. Francis Tuttle, Executive Director, Office of the Governor, Oklahoma Department of Economic Development

125. James Valsame, Consultant, Basic Education Accreditation, Policy Development, North Carolina Department of Public Instruction

126. Mary Wakeford, Research Assistant, General Administration, University of North Carolina

127. Betty Wallace, Deputy Assistant State Superintendent, Instructional Services, North Carolina Department of Public Instruction

128. Joseph Webb, Assistant State Superintendent, North Carolina Department of Public Instruction

129. Ed Wilson, Executive Vice President, North Carolina Department of Community Colleges

130. Linda Wilson, JTPA Accountant, North Carolina Department of Public Instruction

131. Cliffornia Wimberley, Chief of Vocational Programs, Division of Youth Services, North Carolina Department of Public Instruction

132. Roger Worthington, Education Program Director, North Carolina Department of Community Colleges

133. Daryl Adams, Research Associate, Department of Science Education, University of Georgia

134. Robert Bocklung, Minnesota State Board of Vocational/Technical Education

At least one study team member participated in the following activities:

- Design Conference for the National Assessment of Vocational Education, U.S. Department of Education, Washington, D. C.
- Meeting of the University of North Carolina Board of Governors' Task Force on the Preparation of Teachers, Greensboro, N.C.
- Regional Community College Presidents' Meeting, Reidsville, N.C.
- Summer Workshop, North Carolina Vocational Education, Greensboro, N.C.
- Site visits to local school systems; these visits included interviews with local public school administrators and vocational education teachers.

Appendix D

Descriptive Findings Related to Vocational/Technical Education Service Provision[1]

Eight state agencies and two state councils were identified as having statutory responsibilities for the provision of vocational/technical education (including JTPA) in North Carolina. These agencies and commissions are listed in Table D.1. Where appropriate, specific vocational/technical education programs are listed under the agency. The table also identifies the specific category of services provided through each program. These six service categories (prevocational, employability skills development, occupational area preparation, occupational specific offerings, job specific training, and work experience) are defined at the end of the table.

Of note is that, in addition to the above, virtually every State agency is involved in vocational/technical education as it relates to its own or related agency/organization personnel. Some examples of this are as follows:

-- The Department of Crime Control and Public Safety trains highway patrol and alcohol law enforcement personnel.

-- The Wildlife Resource Commission conducts training for game and fishery law enforcement personnel.

-- The Department of Justice operates the Criminal Justice Center at Salemburg, which trains numerous types of law enforcement personnel including State Bureau of Investigation agents and marine fisheries law enforcement personnel. The Department of Justice also houses the Criminal Justice Education and Training Standards Commission, which sets training standards for many state and local law enforcement positions.

-- The Department of Insurance provides fire and rescue instructional courses for paid, volunteer, and county fire and rescue personnel.

-- The Department of Transportation conducts training for law enforcement personnel such as process officers and motor vehicles inspectors.

-- The Department of Agriculture trains meat and poultry inspectors.

-- The Division of Forest Resources of the Department of Natural Resources and Community Development trains some entry-level personnel and re-trains personnel who wish to change jobs within the division.

1/ The basis for most of the information in this Appendix D is Bibliography Items 45 and 165.

TABLE D.1. AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
Department of Public Instruction and Local Education Agencies							
Vocational Education	X	X	X	X		X	Preparation for Advanced Vocational Education
Perkins Title II-Administration							
Perkins Title II-Handicapped							
Perkins Title II-Disadvantaged							
Perkins Title II-Sex Equity							
Perkins Title II-Program Improvement							
Perkins Title II-Home Economics							
Job Placement Center	X	X				X	Job Placement

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[1] Definitions for the seven service categories are provided at the end of this table.

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
JTPA Extended School Day	X	X	X	X			
Transition (Project Help)	X	X					
Department of Community Colleges and Local Community Colleges and Technical Institutes							
Vocational & Technical Education	X	X	X	X		X	
Continuing Education. Occupational Ext.			X	X		X	
New & Expanding Industry Training					X		
Human Resources Development	X	X			X		
Perkins Title II - Adult Training			X	X			

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[1] Definitions for the seven service categories are provided at the end of this table.

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
Perkins Title II - Single Parents		X	X	X			
Perkins Title II - Disadvantaged			X	X			
Cooperative Skills Training			X	X	X		
JTPA - 8% State Education and Coordination	X	X	X	X	X		
Perkins Title II - Handicapped			X	X			
Perkins Title II - Sex Equity	X		X	X			
Perkins Title II - Criminal Offenders			X	X			
Vo. Ed. Act '63 (Sub Parts II.III. & IV)				X			
JTPA - Dislocated Worker		X		X	X		
In-Plant Training Program					X		Teacher Training

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[1] Definitions for the seven service categories are provided at the end of this table.

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
The University of North Carolina System							
Vocational/Technical Education	X	X	X	X	X	X	
Teacher Preparation	X	X	X	X	X	X	
Department of Commerce							
JTPA Title II-A Employment & Training	X	X		X	X	X	Job development Job follow-up Support services Job clubs
JTPA Title II-B Summer Youth Employment	X	X				X	Remedial education
JTPA Title III--Dislocated Worker Pgrm.	X	X		X	X		
JTPA Title IV-C Veteran's Program							Job development Job placement Job search assistance

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[1] Definitions for the seven service categories are provided at the end of this table

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
Older Worker Job Search--Title I(C)	X			X	X	X	Job development Job placement Job search assistance
Labor Market Information							Labor market information
SOICC							Labor market information
Institutionalized Offenders Project	X						Job placement Job development Job search assistance Support services Labor market information
Department of Correction							
Pre-Employment Training		X					
Community Readiness Training (CRT)[3]		X					
Vocational Education			X	X			
Apprenticeship				X	X		

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[1] Definitions for the seven service categories are provided at the end of this table

TABLE 1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
Department of Labor							
Preapprenticeship				X	X		
Apprenticeship				X	X		
Department of Human Resources Local County Departments of Social Services							
Work Incentive Program	X	X		X	X		Support services
Community Work Experience (CWEP)/Workfare	X	X		X		X	Support services
Vocational Rehabilitation Services	X	X	X	X	X		Support services
JTPA 3% Older Individuals Program	X	X	X	X	X		Support services
Youth Services Vocational Education	X	X		X			
Vocational Internship Program	X	X		X		X	

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[1] Definitions for the seven service categories are provided at the end of this table

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

	Services Offered[1]						
State and Local Agency or Commission and (where applicable) Major Program Areas	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
Department of Natural Resources and Community Development							
Employment and Training (DET)	X	X		X	X	X	
Employment and Training (RSDAs)	X	X		X	X	X	
Economic Opportunity							Job Placement Support Services
Community Assistance							Create jobs Retain jobs Promote/coordinate vocational education and training
JTPA Title IV							
Migrant Workers							
American Indians							
Job Corp							

TABLE D-1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

State and Local Agency or Commission and (where applicable) Major Program Areas	Services Offered[1]						
	Pre-Vocational Education	Employability Skills Development	Occupational Area Preparation	Occupational Specific Preparation	Job Specific Preparation	Work Experience	Other
State Advisory Council on Education							Oversight authority for vocational/technical education
North Carolina State Job Training Coordinating Council							Reviews, coordinates, and recommends JTPA programs and plans.
Private Sector Employment and Training							

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[1] Definitions for the seven service categories are provided at the end of this table

TABLE D.1 (continued). AGENCY RESPONSIBILITIES FOR VOCATIONAL/TECHNICAL EDUCATION (INCLUDING JTPA)

Definitions of Offered Services:

Pre-Vocational Education: Career awareness and exploration activities, vocational counseling and guidance, and vocational occupational skills, abilities, and interests assessment.

Employability Skills Development: Activities related to development of work oriented values and attitudes, job survival skills, job search skills and basic skills development where the intent is to increase immediate employability of the individual.

Occupational Area Preparation: Training to develop general knowledge, skills, and attitudes that are applicable across a family or cluster of related occupations with similar requirements.

Occupational Specific Preparation: Training to develop knowledge, skills, and attitudes required in the performance of a specific occupation or job type.

Job Specific Preparation: Training for a designated job and generally for a specific employer, including on job training (OJT).

Work Experience: Activities that provide participants with work experience and its related benefits as an end in itself rather than as training for a specific job.

Other: Special activities not elsewhere included such as preparation for advanced vocational education, job placement, remedial education, teacher training, support services such as job placement or provision of labor market information.

Source: Office of Management and Budget Survey, May 1986; supplemented by RTI follow-up activities.

Table D.2 shows the number of clientele served (in program year 1985-86) the number of service delivery points, and the number of program operations for each program within the eight state agencies. While these data cannot be summed and are difficult to compare because of the divergent reporting methods, they do offer insights into the relative size of the various vocational/technical education programs.

Table D.3 shows the special populations for whom the vocational/technical education programs are operated. The total number of programs operated for each special population and the total number of agencies involved in providing these programs are given at the end of the table.

Vocational/technical education also is provided by the 28 proprietary schools (17 business schools, 10 trade schools, and 1 correspondence school) licensed by the State Board of Education.

The balance of this appendix provides details of the vocational/technical education services provided by the State Agencies and councils listed in Table D.1.

1. Department of Public Instruction

Two divisions of the Department of Public Instruction have responsibilities directly related to vocational education (including JTPA). These are the Division of Vocational Education and the Division of Support Services.

a. Division of Vocational Education

The state Board of Education is authorized and directed by the North Carolina General Assembly to administer through local boards of education a comprehensive program of vocational education which shall be available to all students who desire it in the public secondary schools of this State. The purposes of vocational education in North Carolina public secondary schools are: (1) Vocation Skill Development - to prepare individuals for paid or unpaid employment in recognized occupations, new occupations, and emerging occupations, (2) Preparation for Advanced Education - to prepare individuals for participation in advanced or highly skilled vocational and technical education, and (3) Pre-Vocational; Introductory - to assist individuals in the making of informed and meaningful occupational choices. It is also the legislative intent to authorize the State Board of Education to support appropriate vocational education instruction and related services for

TABLE D.2. NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas)	Number of Clientele	Number of Service Delivery Points	Number of Program Operations
Department of Public Instruction and Local Education Agencies			
Vocational Education	330,850 enrolled (unduplicated)[a] 416,777 enrolled (includes duplicates)[b]	140 school systems	200 programs (unduplicated) 5000 programs (includes duplicates)
Perkins Title II - Administration	Not applicable		
Perkins Title II - Handicapped	3,000 students		
Perkins Title II - Disadvantaged	7,000 students		
Perkins Title II - Sex Equity	100 students		
Perkins Title II - Program Improvement	Unavailable		
Perkins Title II - Home Economics	Unavailable		
Job Placement Center	4,530 enrolled	146 centers	
JTPA Extended School Day	8,276 enrolled	60 programs	

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[a] Unduplicated - actual head count

[b] Duplicated - actual number taking one or more vocational education classes

TABLE D.2 (continued). NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas)	Number of Clientele	Number of Service Delivery Points	Number of Program Operations
Transition (Project Help)	200 enrolled		8 programs
Department of Community Colleges and Local Community Colleges and Technical Institutes			
Vocational & Technical Education	176,787 enrolled	58 institutions	236 programs
Continuing Education, Occupational Ext.	230,641 enrolled		
New & Expanding Industry Training	7,676 enrolled	35 institutions	
Human Resources Development	4,531 enrolled		
Perkins Title II - Adult Training	No data available		
Perkins Title II - Single Parents	No data available		
Perkins Title II - Disadvantaged	No data available		
Cooperative skills Training	4,830 employed	19 institutions	

TABLE D.2 (continued). NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas.	Number of Clientele	Number of Service Delivery Point	Number of Program Operations
JTPA - 8% State Education and Coordination	1,278 enrolled	21 institutions	27 programs
Perkins Title II - Handicapped	No data available		
Perkins Title II - Sex Equity	75 enrolled (courses) 300 enrolled (short workshops)	5 institutions	
Perkins Title II - Criminal Offenders	320 enrolled		
Vo. Ed. Act '63 (Sub Parts II,III, & IV)	98,564 enrolled (vocational/technical programs) 198,185 enrolled (short term adult) occupational programs	58 institutions	
JTPA - Dislocated Worker	2,116		
In-Plant Training Program	No data available		
The University of North Carolina System			
Vocational/Technical Education		648	9
Teacher Preparation		539	11 campuses

TABLE D.2 (continued). NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas)	Number of Clientele	Number of Service Delivery Points	Number of Program Operations
Department of Commerce			
JTPA Title II-A Employment & Training		4,151 separated 2,923 employed	
JTPA Title II-B Summer Youth Employment		2,503 enrolled	
JTPA Title III--Dislocated Worker Pgrm.		9,903 employed	
JTPA Title IV-C Veteran's Program		390 entered 172 participated	
Older Worker Job Search--Title I(C)		58 employed	
Labor Market Information			
SOICC	No data on number of participants	255 schools	
Institutionalized Offenders Project	Unavailable		
Department of Correction			
Pre-Employment Training Community Readiness Training	200 average participating monthly		
Vocational Education	2,572 average monthly participation 1,335 certicates awarded		

TABLE D.2 (continued). NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas)	Number of Clientele	Number of Service Delivery Points	Number of Program Operations
Apprenticeship	23 average participating monthly		
Department of Labor			
Preapprenticeship (FY 1986)	1.879 participants		523
Apprenticeship (FY 1986)	2.000 enrolled 300 completers annually		1.200
Department of Human Resources and Local County Departments of Social Services			
Work Incentive Program (WIN)	5,577 employed		
Community Work Experience (CWEP)/Workfare	2,050 employed 97,114 hours public service employment provided participants.		
Vocational Rehabilitation Services (FY 1985-1986)	57,524 evaluated and served 10,531 rehabilitated to employment		
JTPA 3% Older Individuals Program	404 enrolled		15 programs
Youth Services Vocational Education	600-700 participants		

TABLE D.2 (continued). NUMBER OF CLIENTELE SERVED BY VOCATIONAL/TECHNICAL EDUCATION PROGRAMS (IN PROGRAM YEAR 1985-86)

State Agency/Commission (and, where applicable, major program areas	Number of Clientele	Number of Service Delivery Points	Number of Program Operations
Department of Natural Resources and Community Development			
Employment and Training (DET)	Unavailable		
Employment and Training (RSDAs)	Unavailable		
Economic Opportunity	Unavailable		
Community Assistance	2070 potential jobs to be created		
JTPA Title IV			
Migrant Workers	Unavailable		
American Indians	Unavailable		
Job Corp	Unavailable		
State Advisory Council on Vocational Education	NA	NA	NA
North Carolina State Job Training Coordinating Council	NA	NA	NA
Private Sector Employment and Training	Unavailable		

Source: Office of Management and Budget Survey, May 1986; supplemented by RTI follow-up activities.

TABLE D.3. SPECIAL POPULATIONS FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-capped	Offenders	Minori-ties	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employers	Foster Children	Veterans	Older Worders
Department of Public Instruction and Local Education Agencies													
Vocational Education		X											
Perkins Title II - Administration													
Perkins Title II - Handicapped				X									
Perkins Title II - Disadvantaged			X										
Perkins Title II - Sex Equity							X						
Perkins Title II - Program Improvement													
Perkins Title II - Home Economics		X											
Job Placement Center		X	X	X	X			X			X		
JTPA Extended School Day		X	X	X	X			X	X				

TABLE D.3 (continued). SPECIAL POPULATION FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-capped	Offenders	Minori-ties	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employees	Foster Children	Veterans	Older Worders
Transition (Project Help)		X	X	X	X			X			X		
Department of Community Colleges and Local Community Colleges and Technical Institutes													
Vocational & Technical Education	X	X								X			
Continuing Education, Occupational Ext.	X									X			
New & Expanding Industry Training	X												
Human Resources Development	X	X						X		X			
Perkins Title II - Adult Training	X									X			
Perkins Title II - Single Parents	X						X						
Perkins Title II - Disadvantaged	X		X	X									

TABLE D.3 (continued). SPECIAL POPULATIONS FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-capped	Offenders	Minori-ties	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employees	Foster Children	Veterans	Older Worders
Cooperative Skills Training	X												
JTPA - 8% State Education And Coordination	X		X	X				X	X	X			
Perkins Title II - Handicapped	X			X									
Perkins Title II - Sex Equity	X						X						
Perkins Title II - Criminal Offenders	X				X								
Vo. Ed. Act '63 (Sub Parts II,III, & IV)	X		X										
JTPA - Dislocated Worker	X									X			
In-Plant Training Program	X									X			
The University of North Carolina System													
Vocational/Technical Education	X												

TABLE D.3 (continued). SPECIAL POPULATIONS FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-Capped	Offenders	Minorities	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employers	Foster Children	Veterans	Older Workers
Teacher Preparation	X												
Department of Commerce													
JTPA Title II-A Employment & Training	X		X	X	X	X	X	X	X			X	
JTPA Title II-B Summer Youth Employment		X	X							X X			
JTPA Title III--Dislocated Worker Pgrm.	X									X			
JTPA Title IV-C Veteran's Program	X											X	
Older Worker Job Search--Title I(C)	X												X
Labor Market Information	X	X											
SOICC	X	X	X	X									
Institutionalized Offenders Project-JTPA		X			X								

TABLE D.3 (continued). SPECIAL POPULATIONS FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-Capped	Offenders	Minori-ties	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employees	Foster Children	Veterans	Older Worders
Department of Correction													
Pre-Employment Training/ Community Readiness Training (CRT)[5]	X	X			X								
Vocational Education	X	X			X								
Apprenticeship	X	X											
Department of Labor													
Preapprenticeship	X		X	X	X	X	X	X	X	X		X	X
Apprenticeship	X	X								X		X	
Department of Human Resources													
Work Incentive Program	X							X					
Community Work Experience (CWEP)/Workfare	X							X					
Vocational Rehabilitation Services	X	X		X									
JTPA 3% Older Individuals Program	X												X
Youth Services Vocational Education		X			X								

TABLE D.3 (continued). SPECIAL POPULATIONS FOR WHOM VOCATIONAL/TECHNICAL EDUCATION PROGRAMS ARE OPERATED

State Agency/Commission (and, where applicable, major program areas)	Adults[1]	Youth[2]	Econ. Disadv.	Handi-Capped	Offenders	Minorities	Sex Equity[3]	Welfare Appl., Recip.	Drop Outs[4]	Unemployed, Employees	Foster Children	Veterans	Older Worders
Vocational Internship Program		X			X								
Department of Natural Resources and Community Development													
Employment and Training (DET)	X	X	X	X	X	X	X	X	X	X		X	X
Employment and Training (RSDAs)	X	X	X	X	X	X	X	X	X	X		X	X
Economic Opportunity	X		X							X			
Community Assistance	X		X	X		X	X			X			X
State Advisory Council on Education	Not applicable												
North Carolina State Job Training Coordinating Council	X	X	X	X	X	X	X	X	X	X		X	X
Private Sector Employment and Training	Unavailable												

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[1] For purposes of this table, adults are generally defined as individuals who are age 18 or over; for JTPA programs, youth are defined as individuals 16-21 years

[2] For purposes of this table, youths are generally defined as individuals who are under 18 years of age; for JTPA programs, adults are defined as individuals 22 y old and older.

[3] Includes programs for homemakers and single parents.

[4] Includes actual and potential dropouts.

Source: Office of Management and Budget Survey, May 1986; supplemented by RTI follow-up activities.

individuals who have other specialized vocational education needs that can be fulfilled through a comprehensive vocational education program as designated by State Board of Education policy or federal vocational education legislation.

The Division of Vocational Education in the Department of Public Instruction supports instructional programs and support services designed to satisfy these purposes. Almost 331,000 (unduplicated) public secondary students in approximately 140 local school systems in North Carolina are enrolled annually in vocational education programs designed to prepare them for productive citizenship. Programs are offered for preparing students in more than 400 different occupations traditionally categorized into seven areas: agriculture, business and office, marketing, health occupations, occupational home economics, technology education, and trade and industrial education. This division also supports pre-vocational education in grades 7-9 and consumer homemaking education in grades 7-12. Special programs and services also are provided annually to over 10,000 students with disadvantaged and handicapping conditions.

b. Division of Support Services

The Division of Support Services administers the Job Placement Centers Program and the Extended School Day Program. It manages the Transition Programs cooperatively with the Division of Vocational Education and the Division of Exceptional Children.

Job Placement Centers provide pre-employment skills and entry-level job experiences to economically disadvantaged in-school youth (14-21 years old) who are potential school dropouts.

The Extended School Day Program recruits disadvantaged dropouts and potential dropouts and provides them an opportunity to complete their high school education while working full or part-time. This program provides assessment, counseling, vocational exploration, remedial education, job search assistance, and other activities. Subsidized or unsubsidized work experience is arranged for students. Classes for this year-round program are usually taught in the late afternoon and evening. Vocational education funds are used for many of these programs.

The Transition Programs provide economically disadvantaged and handicapped in-school youth (16-21 years old) with pre-employment skills training, vocational job skills training, and academic skills training.

2. Department of Community Colleges

As set forth in the General Statutes of North Carolina the major purpose of each and every community or technical college is to offer (a) vocational and technical education and training, (b) basic, high school level, academic education needed in order to profit from vocational and technical education for students who are high school graduates or who are beyond the compulsory age limit of the public school system and who have left the public schools. Under specified conditions, juveniles of any age committed by a court to the Division of Youth Services of the Department of Human Resources may take courses offered by institutions of the System.

Programs designed to satisfy these purposes are managed within the Department of Community Colleges by Administration, the Division of Program Services, and the Division of Adult and Continuing Education.

a. Administration

The Administration of the Department of Community Colleges manages the JTPA-Dislocated Worker Program, and six programs funded under Title II of Carl D. Perkins Vocational Education Act: Adult Training, Single Parents, Disadvantaged, Handicapped, Sex Equity, and Criminal Offenders.

JTPA-Dislocated Worker provides training for workers who become unemployed due to plant closings or layoffs and are unlikely to return to their former occupations. Training includes vocational and technical skills training, employability skills development, adult basic education, and programs leading to high school completion. Customized skills training for a particular employer also is provided.

Carl D. Perkins Vocational Education Act Title II-Adult Training provides vocational, technical, or occupational extension programs and other activities to serve adults who are in need of training or retraining. Funds also support improved or expanded services for these adults.

Carl D. Perkins Vocational Education Act Title II-Single Parents provides single parents or homemakers with vocational, technical, occupational extension, and basic literacy instruction. Additionally, special counseling services and support services such as dependent care, transportation, and tuition are allowable expenses.

Carl D. Perkins Vocational Education Act Title III-Disadvantaged provides disadvantaged individuals with vocational, technical, or occupational services (supplemental to those services normally provided to each student).

Carl D. Perkins Vocational Education Act Title II-Handicapped provides handicapped individuals with vocational, technical, or occupational extension courses (all services are supplemental to those normally provided to each student).

Carl D. Perkins Vocational Education Act Title II-Sex Equity serves individuals who participate in programs designed to eliminate sex bias and stereotyping in vocational education. The two types of available programs are: (1) training for women (and men) in nontraditional curricula, including skilled trades, high technology, and business entrepreneurship, and (2) short workshops that offer older women, high school graduates, and high school dropouts some direction in returning to either school or the workforce.

Carl D. Perkins Vocational Education Act Title II-Criminal Offenders provides vocational, technical, or occupational extension programs designed to meet the special needs and enhance the participation of criminal offenders who are serving in a correctional institution.

b. Division of Program Services

This division administers Vocational and Technical Education, Cooperative Skills Training, JTPA-8% State Education and Coordination, the New and Expanding Industry Program, and the In-Plant Training Program.

Over 236 vocational and technical education programs are offered at one or more of the 58 community or technical colleges in the state, totaling over 1,700 program offerings. In general, curriculum programs lead to certificates, diplomas, or associate degrees. Technical programs are two years in length, while vocational programs vary from approximately 6 months to two years.

Cooperative Skills Training Programs provide customized training for skilled and semi-skilled workers who are employed in industrial occupations and the traditional trades and who need additional skills and technical knowledge. Emphasis is placed on training for machine metal working and industrial maintenance.

JTPA 8 Percent State Education and Coordination Grants Programs serve (1) economically disadvantaged individuals (2) Food Stamp recipients, (3) recipients of Aid to Families with Dependent Children (AFDC), (4) handicapped individuals who are defined as and meet the economic criteria for a family of one, and (5) foster children. The types of training provided include class size training, individual referral, limited work experience, educational training, and services only programs. These are described in subsection 8.a of this Appendix.

New and Expanding Industry Training Programs provide custom-designed job-specific training for new and expanding industries at no cost to the student or the employer. The purpose of this state-funded service is to promote orderly industrial growth, to respond adroitly to changes in economic development patterns, and to provide students with training necessary for new employment opportunities.

In-Plant Training Program provides plant site training that emphasizes hands-on skill development for employees who are newly hired, need entry level skills, or who need up-grading or retraining. The five categories of training are: industry, agriculture, business, health agencies, and governmental organizations.

c. Division of Adult and Continuing Education

Programs managed by this division are: Continuing Education and Occupational Extension and Human Resources Development.

Continuing Education and Occupation Education offers single, occupationally-oriented courses to adults seeking to upgrade their skill training or to train for a new occupation. Most courses are developed and taught on request from a group of people or an employer. These courses are usually offered at a time and place convenient to the students.

Human Resources Development provides chronically unemployed and underemployed adults with structured pre-vocational training, counseling, and placement into permanent jobs or skill training. Program design calls for a re-orientation to the world of work through recognition of personal assets and limitations, understanding the effect of one's behavior on others, familiarization with problem-solving processes, and development of basic academic and communications skills that are pre-requisite to securing and maintaining employment. The period of instruction averages eight weeks. Upon graduation, students are offered follow-up services for one year.

3. The University of North Carolina System

The University of North Carolina System participates in vocational/technical education in two ways. One, universities prepare vocational/technical teachers for the public school system. The role of the universities in teacher preparation is discussed in detail in Appendix H.

Two, a few vocational education programs are offered within the university system. These are as follows:

- Associate (2-yr.) Degree programs offered for military personnel at Fort Bragg by Fayetteville State University in these specific areas:

  - Business Administration
  - Secretarial Science.

- Associate (2-yr.) Degree Program in Applied Agriculture at North Carolina State University in these specific areas:

  - Agricultural Equipment Technology
  - Agricultural Pest Control
  - Field Crops Technology
  - Food Processing, Distribution, and Service
  - General Agriculture
  - Livestock Management and Technology
    - Animal Husbandry Option
    - Dairy Husbandry Option
  - Turfgrass Management

4. Department of Commerce

As the major state agency for economic development, the Department of Commerce houses several divisions with responsibilities related to employment and training. These are the Business/Industry Development Division, the International Division, the Small Business Development Division and the North Carolina Employment Security Commission. The Business/Industry Development Division is the state's primary agency for business/industry recruitment and business assistance. The International Division has responsibilities for the state's foreign trade and international recruitment. The Small Business

Development Division encourages the development of new businesses. Each of these divisions provides businesses with information about the state's labor resources and training opportunities.

The Employment Security Commission houses the North Carolina Employment Service, the Labor Market Information Division and The State Occupational Information Coordinating Committee (SOICC).

a. Employment Service

The Employment Service provides job placement services and participates in the administration of federal programs such as the Job Training Partnership Act (JTPA), Veterans Employment Services (VES), and Work Incentive (WIN).

Job Placement Services such as intake, job exchange, and employability development are provided to the general public. Intake services include preliminary assessment of needs and routing, application taking, orientation to jobs, and provision of job information. Job exchange services include job referral and placement, job development, provision of job search workshops, proficiency testing, specific aptitude testing for selection, and provision of labor market information. Employability development services include individual and group counseling, vocational assessment, employability development planning, accessing of supportive services, referral to training, and job development.

The North Carolina Employment Service also is the prime contractor with the Division of Employment and Training for four JTPA programs. These are as follows.

The JTPA Title III - Dislocated Worker Programs assist individuals, communities, and industries in solving dislocation problems. The program operates at three levels. One is the response to plant closures and massive layoffs. Central to this activity is an employment and training team which meets with community leaders to develop program components. These may include training and/or placement activities. The team is composed of representatives from the Employment Security Commission, the Department of Community Colleges, and the Business Assistance Division of the Department of Commerce. A second level is the training of dislocated workers for a specific industry. These activities are coordinated with the industrial recruiting efforts of the North Carolina Department of Commerce and with the New and Expanding Industries

Program of the Department of Community Colleges. The dual goals of this activity are to attract industry to the state and to provide extra training opportunities to dislocated workers. Funds are earmarked on a statewide basis for use by the Employment Security Commission to purchase training activities (On-the-Job Training, Institutional Training and Education Training) on an individual basis. The third level of the program is the maintenance of the Dislocated Worker Program presence in communities throughout the state.

The Title IV-C Veterns Program provides job development and placement services for disabled veterans, Vietnam-era veterans, and recently-separated veterans. This program supplements Wagner-Peyser placement services for targeted veterans.

The Title II-B Summer Youth Employment and Training program provides remedial education and work experience in public sector or private non-profit organizations. Remedial education is to equip participants to compete more effectively in the classroom as they progress through high school and other levels of education. The purpose of work experience is to acquaint youth with the world of work, the work ethic, employer expectations, and related values and experiences. The clientele are economically disadvantaged youth ages 16 through 21. Persons 14 and 15 years old may be served if included in an approved plan.

The JTPA Title I(c) Older Worker Job Search Program serves economically disadvantaged older workers (55 years of age and over), welfare mothers, female heads of households, males, offenders, and others who qualify. Services include job search assistance, job development and placement, and supportive services.

b. Labor Market Information Division

The Labor Market Information Division of the Employment Security Commission gathers and analyzes labor market data for publication in numerous reports. Unemployment rates are published in monthly, quarterly, and annual reports. The Division also publishes five and ten year occupational projections and industry trends, as well as data regarding the characteristics of (insured) unemployed people. These reports are available by county, metropolitan statistical area, multi-county planning region, and on a state-level basis. In March, 1984, a private consulting firm delivered planning data by service delivery area through U.S. Department of Labor contract to the Employment Security Commission. "Report 3" describes such demographic characteristics as educational attainment and labor force participation rates.

c. SOICC

The State Occupational Information Coordinating Committee (SOICC) was established for the general purpose of improving coordination, communication, and cooperation among the users of occupational information. More specifically, the SOICC is to (1) develop an occupational information system designed to be used for program planners and administrators and (2) to use the occupational information system to develop a career information system for students and counselors.

The SOICC also periodically produces a career information publication which is usually distributed through guidance counselors to high school students. In addition, the SOICC is an open forum for the users and producers of labor market information to discuss their labor market information needs and the limitations of existing labor market information.

5. Department of Correction

This department currently operates three vocational education and training programs: Pre-Employment Training, Vocational Education, and an Apprenticeship Program. Community Readiness Training (CRT) was recently eliminated.

Pre-Employment Training emphasizes the human and environmental factors in the world of work to help the student further his/her employability through recognition of personal assets and limitations, recognition of the effect of his/her behavior on others, and development of problem-solving skills. This program is generally located in the system's twenty-one prision facilities with approximately 200 inmates participating. Sponsored jointly by the Department of Correction and the local community colleges, instructors and equipment are primarily provided by community colleges. The Department of Correction provides facilities and some equipment.

Vocational Education provides 30 different vocational courses for the inmate population. Table D.4 lists these courses and the number of facilities offering each course. The average monthly participation in vocational education for calendar year 1985 was 2,572. During this same period 1,335 inmates received vocational certificates. Local community colleges and technical institutes provide as much as 90 percent of the vocational education instruction through funding provided by the General Assembly. Arrangements for these services does not include an exchange of monies between the agencies. Most of the remaining 10 percent of vocational education instruction is provided by instructors within the Department of Correction. Community colleges and technical institutes are the primary providers of equipment, while the Department of Corrections provides facilities.

TABLE D.4. VOCATIONAL EDUCATION COURSES OFFERED WITHIN THE DEPARTMENT OF CORRECTION AND NUMBER OF PRISON UNITS OFFERING EACH COURSE.

Vocational Education Courses	Number of Prison Units Offering Course
Light Construction/Bldg. Trades	8
Electrical Wiring	11
Brick Masonry	11
Plumbing	4
Carpentry/Woodworking	14
Drafting	2
Welding	14
Auto Mechanics/Small Eng. Repair	17
Auto Body and Fender Repair	1
Electronics/Radio & TV Repair	4
Air Conditioning/Refrigeration	2
Solar Mechanics	1
Cooking and Baking	24
Food Service Management	5
Secretarial Science	1
Typing	2
Industrial Maintenance	3
Business	3
Sewing	1
Upholstery	1
Horticulture	5
Phototypsetting	1
Off-Sett Press Operation	1
Surgical Assistant	1
X-Ray Technical	1
Lineman	2
Sign Technician	1
Cosmetology	1
Barber School	1
Farm Equipment Repair	1

The Apprenticeship Program is administered in accordance with Department of Labor regulations within limits imposed by the Department of Correction policies (for example, the wage structure requirements are waived). The program is currently located in two institutions, with approximately 23 inmates participating monthly. Funding is provided by the Department of Correction. A more complete description of the program is given in the following subsection.

6. Department of Labor

The Education and Training Group of the North Carolina Department of Labor has two divisions: Apprenticeship and Pre-Apprenticeship. The Apprenticeship Division's purpose is to promote, accredit, and regulate apprenticeship and other on-the-job training. Division services include assisting employers who voluntarily elect to sponsor apprenticeships and/or on-the-job training by: (a) assisting with the design of the programs, (b) approving and registering the programs and agreements between the sponsor and the participants for state and Federal purposes, (c) assisting the sponsor in acquiring the necessary training assistance from other organizations and agencies such as community colleges and technical institutes, (d) providing technical and consultative services to program sponsors for the duration of the program's term of operation, (e) assuring that the programs meet acceptable standards of quality, (f) assuring that the sponsor exercise affirmative action to provide equal opportunity to all citizens who seek to become apprentices or trainees, (g) approving apprenticeship and other on-the-job training programs on behalf of the federal government so that eligible veterns may receive veterns educational benefits, and (h) certifying and maintaining records of all workers who enroll in apprenticeship programs. The Pre-Apprenticeship Division manages training programs intended to train disadvantaged workers through government and private sector partnerships as authorized by JTPA. The three types of training are: (a) on-the-job (OJT) training for entry-level employees, (b) upgrade training for advanced skill positions, and (c) classroom training, which is operated in most cases in conjunction with OJT or upgrade programs. The primary services provided by the Division are: (a) identification of employers who can provide OJT, and (b) identification of the type of training needed by the employers. Under these Pre-Apprenticeship programs, JTPA pays one-half of the trainee's wages for the duration of the training period.

7. Department of Human Resources

a. The Division of Social Services administers all social service programs for the State of North Carolina. Local departments of social services provide a variety of services for economically disadvantaged families and individuals eligible for public assistance. Services provided to individuals seeking employment include counseling, day care, transportation, and income maintenance.

Some local departments also operate Workfare, Community Work Experience (CWEP), and/or Work Incentive (WIN) programs. The primary goal of Workfare is to improve employability and to enable individuals to move into regular employment. Program operations are based on a law that requires Food Stamp recipients, unless exempt, to perform work as a condition of eligibility. Some counties include such activities as employability planning and orientation to the world of work in addition to the work experience placement.

The purpose of CWEP is to provide work experience to assist Aid to Financially Dependent Children (AFDC) recipients in becoming self-supporting and thereby to reduce welfare costs as well as to provide community service work to public and private non-profit agencies. County social services personnel teach individuals the skills needed to find and keep a job and to remove personal and family barriers to successful employment. As part of this process, clients may perform up to 50 hours per month of community service work in exchange for their benefits in order to learn good work habits and acquire job references.

The WIN program is described under the Employment Security Commission, which is the lead agency for WIN.

b. Division of Vocational Rehabilitation

The primary goal of the vocational rehabilitation program is to return eligible handicapped people to work through a program of rehabilitation services designed to accomplish the employment goal. Services may include any essential service needed to achieve the employment objective. This may include such services as evaluation, counseling and guidance, vocational training (facility, workshop, on-the-job training, community college, technical school, college, university, etc.), mental or physical restoration, the transportation and maintenance needed to complement other services, tools, license, job placement, and follow-up.

c. Division of Aging

The Division of Aging is the prime contractor with the Division of Employment and Training for the JTPA Title II-A 3 Percent Older Individuals Program. The purpose of this program is to fund employment and job training activities for disadvantaged individuals who are age 55 or over. This Division coordinates these JTPA activities with Title V of the Senior Community Service Employment Program.

d. Division of Youth Services

This division manages two vocational/technical education programs: Vocational Education and the Vocational Internship Program.

Vocational Education offers 13 programs (approximately 36 courses) for incarcerated youth at five schools located throughout the state. The school system is accredited by the Department of Public Instruction (DPI) and teachers are certified by DPI standards. All teachers in the system are employed by the Division of Youth Services and are double-certified. They are certified in their area of instruction (e.g., graphic arts) and in the area of special education.

The Vocational Internship Program provides incarcerated youth with the opportunity to work for pay (not more than $.50 per hour) for 1-2 hours per day. Youth are selected for the program on the basis of prior development of applicable vocational skills through vocational courses, an assessment of interest/aptitude, and prior successful participation in the classroom. Approximately 100 students are involved in the program state-wide at any given time.

8. North Carolina Department of Natural Resources and Community Development

a. Division of Employment and Training and Service Delivery Areas (SDAs)

The Division of Employment and Training administers the Job Training Partnership Act (JTPA) for the State of North Carolina. In 1985, the North Carolina General Assembly established the North Carolina Employment and

Training Act (Part 27 of Article 7 of Chapter 143B of the North Carolina General Statutes). This law sets forth the following goals for the state employment and training programs:

- -- To assist North Carolinians in obtaining gainful employment.
- -- To reduce dependence upon public assistance and unemployment insurance programs.
- -- To develop a well trained, productive work force that meets the needs of the State's changing economy.
- -- To make maximum use of existing institutions and organizations with demonstrated effectiveness in employment and training service delivery.

Additional state goals for employment and training programs given in the Governor's Coordination and Special Services Plan for Program Years 1986 and 1987 are:

- -- To create an employment and training system in North Carolina that makes systematic use of all federal, state and local job training resources to provide job training and employability development skills to make North Carolina's workforce more productive.
- -- To build a partnership of business, education, and government that makes job training programs optimally responsive to workplace demands.
- -- To give those individuals and groups with disadvantages in the job market the training and other assistance they need to become fully productive citizens.

Title II-B and Title III of JTPA, respectively, provide for the Summer Youth Employment and Training and the Dislocated Worker Programs. In the program year 1986, the Division of Employment and Training contracted with the Employment Security Commission to provide Title III services. Therefore, these services are described in Subsection 4.a of this Appendix as Employment Security Commission activities.

JTPA Title II-A programs are Adult and Youth Programs. In each program year, funds are allocated in the following manner: 78 percent Service Delivery Area (SDA) Allocations; 8 percent State and Local Education Agencies;

3 percent Older Individuals; 6 percent Incentive and Technical Assistance; and 5 percent State Administration and Audit. Each of these Title II-A program areas are described below.

(1) 78 Percent SDA Allocations. Seventy-eight percent of the program year 1986 Title II-A funds went directly to local service delivery areas (SDA's) within the state. At least 70 percent of these funds have to be used for training. Employment and training program activities vary from SDA to SDA, but are classified into seven principal activity types.

-- Institutional Skills Training is designed for situations where specific demand for identified occupations occurs in a number of companies with the same basic skills requirements or where a single company agrees to hire all certified program completers. Local SDA's contract for delivery of training with area community or technical colleges or private schools. The training may be class size training for a group of participants or for single participants referred on an individual basis.

-- On-the-Job Training (OJT) is occupational skills training provided through the private or public sector to employed participants. During the training period, the employer is reimbursed an amount that averages not more than fifty percent of the participant's wages. This reimbursement is made to compensate the employer for the extraordinary training costs and lower productivity associated with (a) individuals whose skill levels are inadequate to gain employment without special consideration or (b) employed groups in low-paying, dead-end jobs, or in need of new skills. The ultimate goal of OJT is the placement of participants into unsubsidized employment.

-- Work Experience is a work assignment to a public or private non-profit worksite. Its purpose is to provide job experience, help the individual develop occupational skills and good work habits, and to expose the participant to various occupational opportunities.

-- Special Training Programs provide groups of participants with combined classroom and on-the-job training (OJT) programs that are industry specific and consist of customized industry training packages.

-- Educational Training Programs are intended to provide approved courses of instruction in basic education proficiencies necessary to compete in the local labor market, life skills necessary to find and keep employment, and remedial education (i.e., reading, writing, and language skills). Local SDA's contract with area community colleges or other public or private schools for provision of this training.

-- Services-Only Programs are designed to provide employment assessment for applicants, and to assist participants in finding and retaining employment. Services include participant assessment, job counseling, job search assistance, job clubs, job referral, and supportive services designed to aid job retention.

-- Exemplary Youth Programs are designed primarily for persons between the ages of 16 and 21 who have not attained a high school diploma or who have educational deficiencies despite the attainment of a diploma. Four activity sub-types comprise these programs. Education for Employment provides for maintenance of a network of learning centers at convenient locations. Examples are Extended Day Programs and high school learning labs operating within community colleges. Pre-Employment Skills Training offers up to 200 hours of instruction to youth (including some 14-15 year old students) who do not meet established academic achievement levels or who plan to enter the full-time labor market upon leaving school. Assessment, career exploration, job skills training, remedial education, and labor market information may be components. Examples are Dropout Prevention programs and Job Readiness Training programs. Entry Employment Experience allows an individual to work up to 20 hours weekly while school is in session and full-time during summer and holidays. School-to-Work Transition programs are for high school seniors and dropouts who plan to enter the full-time labor market upon graduation. Services include occupational information, job clubs, and placement/follow-up services. An example is Job Readiness Training programs.

(2) JTPA 8 Percent State and Local Education Agencies. Eight percent of the program year 1986 Title II-A funds were distributed to various state and local education agencies. Eighty percent of the funds authorized under this section of the Act must be used to provide services to eligible participants (programmatic activities). The remaining twenty percent may be used to facilitate coordination of employment and training services. Most of the 8 percent funds were allocated by the Division of Employment and Training to the state Board of Education and the State Board of Community Colleges as

the state educational agencies responsible for employment and training. The remaining funds were retained by the Division of Employment and Training to support coordination activities. The coordination funds ($300,000 for Program Year 1986) retained by the Division of Employment and Training were used to facilitate statewide coordination of education and training services under JTPA. Coordination activities include providing leadership and support to the Interagency Coordinating Committee established by the State Job Training Coordinating Council, providing technical assistance and support systems to the various agencies involved in the employment and training system in the State, disseminating information and policies to better assist the various agencies in providing for the total needs of the JTPA eligible population, and the development of an inventory of employment and training programs operated through the State.

(3) JTPA 3 Percent Older Individuals Programs were contracted by the Division of Employment and Training to the Division of Aging in the Department of Human Resources and the Employment Security Commission in the Department of Commerce. These resultant program activities are discussed under these two departments.

(4) JTPA 6 Percent Incentive and Technical Assistance Funds. Half of these funds are used for technical assistance to all service delivery areas. Technical assistance for Program Year 1986 included additional development of the Statewide JTPA Management Information System including further refinement of the follow-up system in accordance with U.S. Department of Labor requirements; improvement of the quality of labor market information available for JTPA planning purposes; assistance to service delivery areas in their efforts to develop youth employment competency systems; and provision of other technical assistance as needs became evident.

The balance of the 6 percent funds were allocated as incentive grants to service delivery areas that exceeded at least four of seven performance standards, and to provide technical assistance to service delivery areas that fail to exceed at least four of seven standards (mandatory) and service delivery areas that fail to exceed all seven standards and request technical assistance (optional).

(5) JTPA 5 Percent State Administration and Audit. These funds provide for the annual audit of DET and each recipient of JTPA Title II and III funds. Additionally, the funds support the administration of the program and support a statewide management information system that collects, stores, produces, and disseminates information needed by service delivery areas. The information assists service delivery areas in meeting general and special reporting requirements, conducting needs analyses, and performing other management functions.

b. Division of Economic Opportunity and Community Action Agencies

The Division of Economic Opportunity administers the Community Services Block Grant Program (CSBG), and the Community Action Partnership Program (CAPP). The purpose of both programs is to provide a range of services and activities intended to address poverty in the community. Funded activities directly related to employment and training may assist low-income participants, including the elderly poor: a) to secure and retain meaningful employment; (b) to attain an adequate education; (c) to obtain emergency assistance through loans or grants to meet immediate and urgent individual and family needs, including the need for health services, nutritious food, housing, and employment-related assistance; and (d) to remove obstacles and solve problems which block the achievement of self-sufficiency.

c. Division of Community Assistance and Recipients of Small Cities Community Development Block Grant (CDBG) Program

The CDBG program provides funds for local projects that create or retain jobs, primarily for low and moderate income persons. The Department of Natural Resources and Community Development encourages applicants to review job needs with JTPA administrators serving their geographic area and to obtain their assistance in identifying groups in the area that already have received training in the needed skill areas or in establishing a training program to meet the job needs.

9. State Advisory Council on Vocational Education

This council was established by executive order #3 by the Governor of North Carolina in accordance with the requirements of the Carl D. Perkins Vocational Education Act. Responsibilities and duties of the Council are prescribed by and limited to the requirements of that act. The stated overall purpose of the Council is to emphasize vocational education as an integral part of the educational process in the State's public secondary schools, and to undergrid the basic statutory purpose of the Community College System--the offering of vocational and technical education. Key duties of the Council include: advising the State Board of Education and the State Board of Community Colleges in development of the State Plan for Vocational Education, as well as reporting to the Governor, the business community, and the general public on policies that should be pursued to strengthen vocational education; reviewing and commenting on the State Plan; consulting with the State Boards on the establishment of evaluation criteria, and reporting on the distribution of vocational education funds in the state. The Council holds at least one public hearing on vocational education each year. At least every two years, the Council is required to evaluate the adequacy and effectiveness of vocational education delivery systems provided for by the Carl D. Perkins Vocational Education Act and the Job Training Partnership Act (JTPA).

10. North Carolina State Job Training Coordinating Council

As required by the Job Training Partnership Act, the Governor has appointed a State Job Training Coordinating Council to fulfill the mandates of Section 122. The initial North Carolina State Job Training Coordinating Council served from early 1983 until the summer of 1985 when a new Council was appointed. The State Council is comprised of representatives from business and industry, state agencies, local government, community based organizations, organized labor, and the general public.

The Council continues to fulfill the following responsibilities:

- Recommends the Governor's Coordination and Special Services Plan.
- Recommends service delivery areas.
- Establishes state goals and objectives for JTPA programs and programs under Wagner-Peyser.
- Reviews local job training plans.
- Prepares annual report to the Governor.
- Reviews and comments on State Plan for Vocational Education.
- Reviews and comments on plans of the North Carolina Employment Security Commission.

11. Proprietary Schools

Twenty-eight proprietary schools are licensed by the State Board of Education. Nine of these also are licensed by the Board of Governors of the University of North Carolina to confer two-year associate degrees. The twenty-eight schools are shown in Table D.5. Excluded from this table are proprietary schools exempt from licensure. Among these exempt schools are nonprofit religious institutions, schools conducted by employers for their own employees where no fee or tuition is charged, and any school for which there is another legally existing board in the State. While no centralized list of these schools could be located, they train for such diverse and numberous occupational areas as cosmetology, barbering, nursing, paramedical technology, radiologic technology, cytotechnology, real estate, auctioneering, flight (for commercial pilot liscenses), and truck triving as well as Bible schools.

TABLE D.5. PROPRIETARY SCHOOLS LICENSED BY THE NORTH CAROLINA STATE BOARD OF EDUCATION (INCLUDING NINE LICENSED BY THE BOARD OF GOVERNORS OF THE UNIVERSITY OF NORTH CAROLINA)

BUSINESS SCHOOLS

American Business & Fashion Institute
Charlotte

*Blanton's Junior College of Business
Asheville
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Business Administration
- Associate of Applied Science in Accounting
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Computer Programming

Brookstone College of Business
High Point

*Cecils Junior College of Business
Asheville
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Business Administration - Management/Marketing
- Associate of Applied Science in Business Administration - Accounting
- Associate of Applied Science in Business Administration - Secretarial Science
- Associate of Applied Science in Medical Office Administrative Assistant
- Associate of Applied Science in Legal Office Administrative Assistant
- Associate of Applied Science in Computer Science

Draughon Business College
Winston-Salem

Greenville School of Commerce
Greenville

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* Degree-granting schools

TABLE D.5 (continued). PROPRIETARY SCHOOLS LICENSED BY THE NORTH CAROLINA STATE BOARD OF EDUCATION (INCLUDING NINE LISCENSED BY THE BOARD OF GOVERNORS OF THE UNIVERSITY OF NORTH CAROLINA)

*Hardbarger Junior College of Business
Raleigh
Degree Programs Licensed by the Board of Governors of the University of North Carolina:

- Associate of Applied Science in Business Administration
- Associate of Applied Science in Senior Accounting
- Associate of Applied Science in Executive Secretarial
- Associate of Applied Science in Medical Secretarial
- Associate of Applied Science in Legal Secretarial
- Associate of Applied Science in Word Processing Secretarial
- Associate of Applied Science in Fashion Merchandising
- Associate of Applied Science in Computer Science

King's Business College
Charlotte

Miller-Motte Business College
Wilmington

Miller-Motte Business College
Gastonia

*Rutledge College of Charlote, Inc.
Charlotte
Degree Programs Licensed by the Board of Governors of the University of North Carolina:

- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Business Administration

*Rutledge College of Durham, Inc.
Durham
Degree Programs Licensed by the Board of Governors of the University of North Carolina:

- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Business Administration

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* Degree-granting schools

TABLE D.5 (continued). PROPRIETARY SCHOOLS LICENSED BY THE NORTH CAROLINA STATE BOARD OF EDUCATION (INCLUDING NINE LISCENSED BY THE BOARD OF GOVERNORS OF THE UNIVERSITY OF NORTH CAROLINA)

*Rutledge College of Fayetteville, Inc.
Fayetteville
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Business Administration

*Rutledge College of Greensboro, Inc.
Greensboro
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Business Administration

*Rutledge College of Raleigh, Inc.
Raleigh
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Business Administration

*Rutledge College of Winston-Salem, Inc.
Winston-Salem
Degree Programs Licensed by the Board of Governors of the University of North Carolina:
- Associate of Applied Science in Accounting
- Associate of Applied Science in Management
- Associate of Applied Science in Secretarial Science
- Associate of Applied Science in Merchandising
- Associate of Applied Science in Data Processing

Salisbury Business College, Inc.
Salisbury

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* Degree-granting schools

TABLE D.5 (continued). PROPRIETARY SCHOOLS LICENSED BY THE NORTH CAROLINA STATE BOARD OF EDUCATION (INCLUDING NINE LISCENSED BY THE BOARD OF GOVERNORS OF THE UNIVERSITY OF NORTH CAROLINA)

TRADE SCHOOLS

American Motor Institute
Charlotte

Bolston Private Electronics Institute
Winston-Salem

Carolina School of Broadcasting
Charlotte

Computer Academy
Charlotte

John Roberts Powers School of Fashion Careers
Raleigh

Lucas Travel School, Inc.
Charlotte

Lucas Travel School, Inc.
Greensboro

Lucas Travel School, Inc.
Raleigh

MTA School
Greensboro

PCA Video Production Institute
Matthews

CORRESPONDENCE SCHOOL

Peace Officer Training Service
Fayetteville

Appendix E

Descriptive Findings Related to Agency Statutory Responsibilities for Vocational/Technical Education

Appendix E

Descriptive Findings Related to Agency Statutory Responsibilities for Vocational/Technical Education

Figure E.1 graphically displays the relationships among the North Carolina State Government agencies within the Executive Branch that were identified as having statutory responsibilities for vocational/technical education (including JTPA).

The State Board of Education, which serves as governing authority for the Department of Public Education, is designated by North Carolina state law as the State Board of Vocational Education and as "the sole agency for the State administration of vocational education at all levels" with "all necessary authority to cooperate with any and all federal agencies in the administration of national acts assisting vocational education, to administer any legislation pursuant thereto enacted by the General Assembly of North Carolina, and to cooperate with local boards of education in providing vocational and technical education programs, services, and activities for youth and adults residing in the areas under their jurisdiction" (Article 10.G.S. Chapter 115C-153).

Further, "the State Board of Education is authorized and directed to administer through local boards of education a comprehensive program of vocational education which shall be available to all students who desire it in the public secondary schools of this State" (Article 10.G.S. Chapter 115C-151). Additionally, state law mandates that "in carrying out its duties, the State Board of Education shall have full authority to develop and implement such policies, rules, regulations, and procedures as necessary to ensure vocational education of high quality" (Article 10.G.S. Chapter 115C-154). The State Board of Education is also directed to prepare a Master Plan for Vocational Education (Article 10.G.S. Chapter 115C-154).

The State Board of Education is composed of 14 members. Eleven of these are appointed by the Governor, subject to confirmation by the General Assembly in joint session. The Lieutenant Governor, State Treasurer, and Superintendent of Public Instruction, who is secretary to the Board, are ex-officio members. The Department itself is divided into two Departments--the Department of Public Instruction and the Office of the Controller. The Superintendent of Public Instruction is the administrative head of the

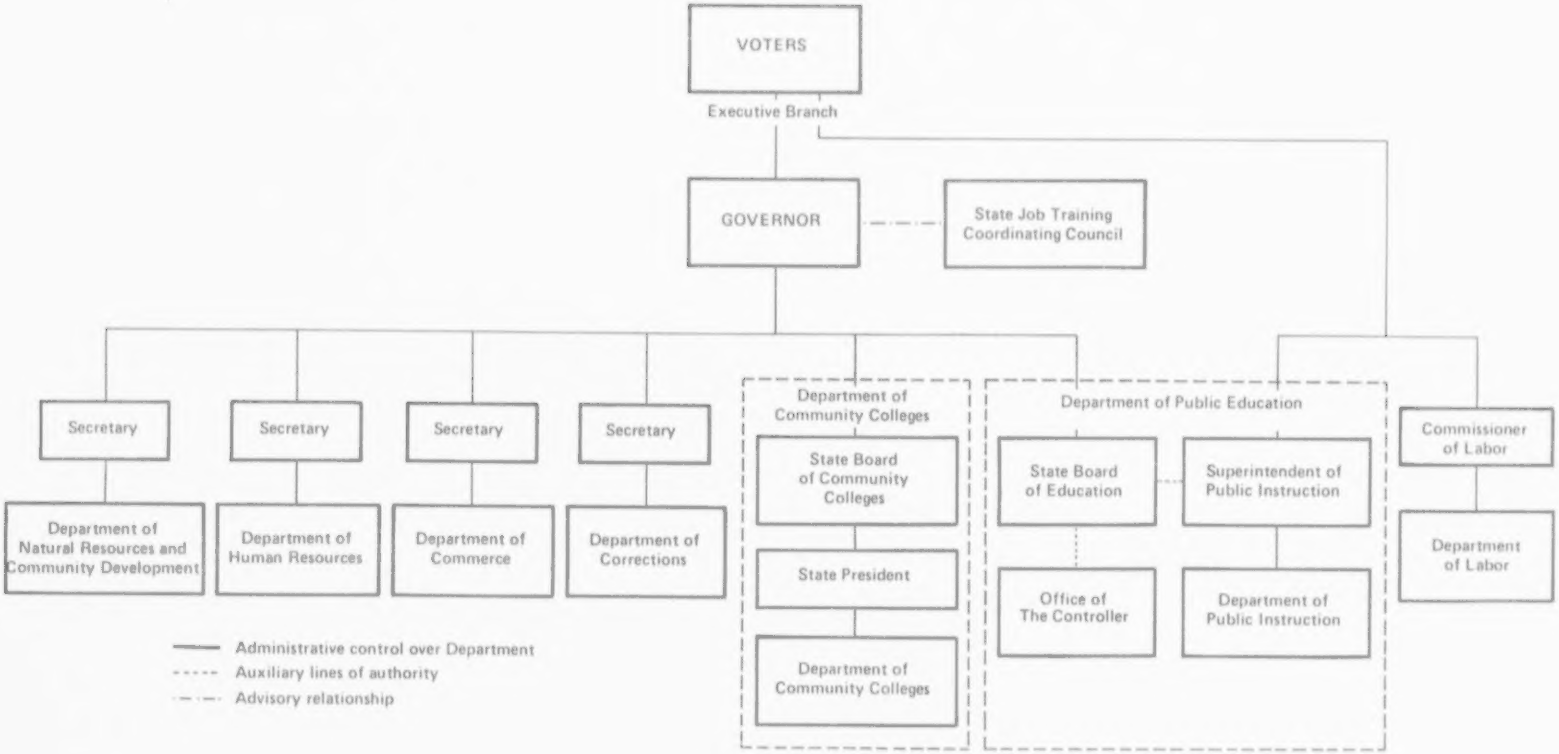
VOTERS
Executive Branch
GOVERNOR
State Job Training Coordinating Council
Secretary
Secretary
Secretary
Secretary
Department of Natural Resources and Community Development
Department of Human Resources
Department of Commerce
Department of Corrections
Department of Community Colleges
State Board of Community Colleges
State President
Department of Community Colleges
Department of Public Education
State Board of Education
Superintendent of Public Instruction
Office of The Controller
Department of Public Instruction
Commissioner of Labor
Department of Labor
Administrative control over Department
Auxiliary lines of authority
Advisory relationship

Figure E.1. Organizational Chart of North Carolina State Executive Branch Agencies and Boards with Statutory Responsibilities for Vocational/Technical Education (Including JTPA).

Department of Public Instruction and is elected by the citizens of North Carolina. The Controller is appointed by the State Board of Education subject to the approval of the Governor

The State Board of Community Colleges is the administrative authority for the Department of Community Colleges. It consists of 20 members with 10 appointed by the Governor, four by the House, and four by the Senate. The remaining two, the Lieutenant Governor and State Treasurer, are ex-officio. The State President of the Community College System is elected by the State Board and serves as the administrative head of the department. North Carolina State law mandates that the State Board of Community Colleges "shall have authority to adopt and administer all policies, regulations, and standards which it may deem necessary for the operation of the Department" of Community Colleges, which "shall be a principal administrative department of State government under the direction of the State Board of Community Colleges, and shall be separate from the free public school system of the State and the Department of Public Education. Additionally, State law provides that the State Board of Community Colleges may adopt and execute such policies, regulations and standards concerning the establishment, administration, and operation of institutions as the State Board may deem necessary to insure the quality of educational programs, to promote the systematic meeting of educational needs of the State, and to provide for the equitable distribution of State and federal funds to the several institutions. Specifically, the State Board of Community Colleges shall establish standards and scales for salaries and allotments paid from funds administered by the State Board, and all employees of the institutions shall be exempt from the provisions of the State Personnel Act. The State Board shall have authority with respect to individual institutions: to approve sites, buildings, building plans, budgets; to approve the selection of the chief administrative officer; to establish and administer standards for professional personnel, curricula, admissions, and graduation; to regulate the awarding of degrees, diplomas, and certificates: to establish and regulate student tuition and fees and financial accounting procedures."

The legislative authority further provides (Article 10.G.S. 115D-12) that each of the 58 institutions shall be governed also by a board of trustees consisting of 13 members. These members are selected as follows: four trustees elected by the Board of Education of the public school administrative unit(s) in the administrative area of the institution; four trustees elected by the board of commissioners of the county(ies) served by the institution; four trustees appointed by the governor; and (ex-offio) the president of the student government. These individuals constitute "a body corporate with powers to enable it to acquire, hold, and transfer real and personal property, to enter into contracts, to institute and defend legal actions and suits, and to exercise such other rights and privileges as may be necessary for the management and administration of the institution..." (Article 10.G.S. 115D-14). Powers and duties of the local boards include the election of the president (subject to the approval of the State Board); the election or employment of all other personnel upon nomination by the president (subject to standards established by the State Board); and the application of the standards and requirements for admission and graduation of students and other standards established by the State Board of Community Colleges. Thus, each institution is a community-based legal entity operating within guidelines and standards at the State level prescribed by the General Assembly and the State Board of Community Colleges.

The remaining agencies shown in Figure E.1 are principal state government administrative departments headed by either an elected or an appointed official. The Commissioner of Labor, who is the administrative head of the Department of Labor, is an elected official. The balance of the administrative heads called "Secretaries," are appointed by the Governor and serve at his pleasure.

The administrative heads have "such powers and duties" as are conferred by the Constitution and laws of the State and/or delegated to them by the Governor. The duties of their departments, which are also set by the Constitution and laws of the State, are exercised and discharged under the supervision and direction of these administrative heads. The University of North Carolina System (not shown in Figure E.1) receives funding from the State of North Carolina but operates as an autonomous system governed by a Board of Governors.

Table E.1 lists the sources of statutory responsibility and authority for vocational/technical education for major programs areas within state agencies and for commissions.

TABLE E.1. SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
Department of Public Instruction and Local Education Agencies	
Vocational Education	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Administration	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Handicapped	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Disadvantaged	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Sex Equity	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Program Improvement	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Perkins Title II - Home Economics	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Article 10. G.S. Chapter 115C
Job Placement Center	P.L. 97-300, Job Training Partnership Act, as amended
JTPA Extended School Day	P.L. 97-300, Job Training Partnership Act, as amended P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended
Transition (Project Help)	P.L. 97-300, Job Training Partnership Act

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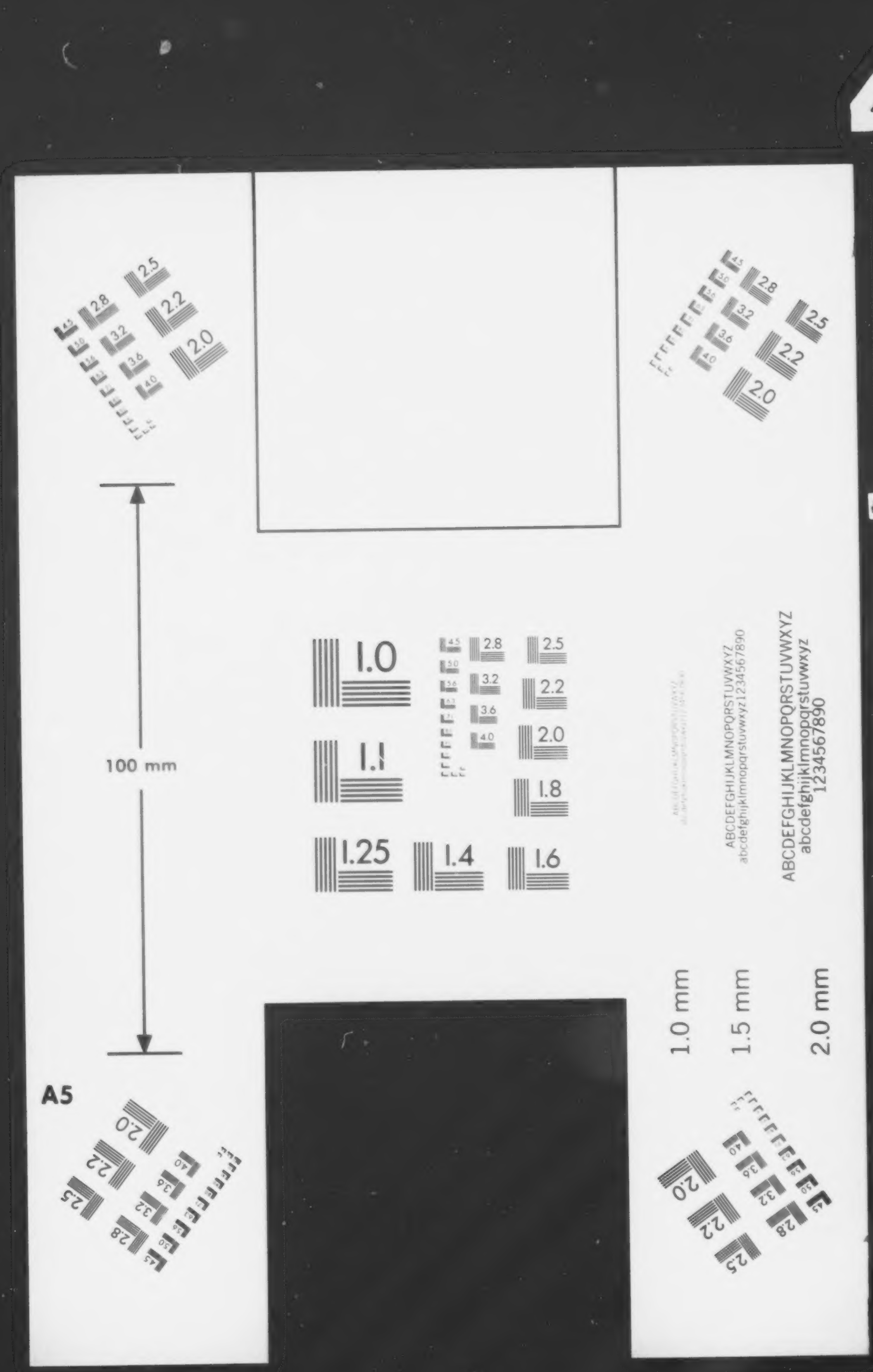
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TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
Department of Community Colleges and Local Community Colleges and Technical Institutes	
Vocational & Technical Education	G.S. Chapter 115D NCAC Title 23, Chapter 2 (Also affected by policies of various licensing and accrediting agencies.)
Continuing Education, Occupational Ext.	NCAC Title 23, Chapter 2, 2D. 0323, 2E.0101(2) NCAC Title 23, Chapter 2, 2D. 0324
New & Expanding Industry Training	NCAC Title 23, Chapter 2, 2D. 0323, 2E. 0101, 2E. 0401
Human Resources Development	NCAC Title 23, Chapter 2, 2D. 0323, 2D.0319, 2.E.0101(4a) Human Resources Development Procedures Manual
Perkins Title II - Adult Training	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Federal Register/Vol 50, No. 159, Aug 16, 1985 - Rules and Regulations
Perkins Title II - Single Parents	P.L. 98-524, Carl D. Perkins Vocational Education. Act, as amended Federal Register/Vol 50, No 159, Aug 16, 1985 - Rules and Regulations
Perkins Title II - Disadvantaged	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Federal Register/Vol 50, No 159, Aug 16, 1985 - Rules and Regulations
Cooperative skills Training	
JTPA - 8% State Education and Coordination	P.L. 97-300 Job Training Partnership Act Federal Regulations for Implementing JTPA OMB Circular A-21 North Carolina Department of Natural Resources and Community Development Regulations

TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
Perkins Title II - Handicapped	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Federal Register/Vol 50, No. 159, Aug 16, 1985 - Rules and Regulations
Perkins Title II - Sex Equity	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Federal Register/Vol 50, No. 159, Aug 16, 1985 - Rules and Regulations
Perkins Title II - Criminal Offenders	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended Federal Register/Vol 50, No. 159, Aug 16, 1985 - Rules and Regulations
Vo. Ed. Act '63 (Sub Parts II,III, & IV)	P.L. 94-482, Vocational Education Act of 1963 (Repealed)
JTPA - Dislocated Worker	P.L. 97-300, Job Training Partnership Act
In-Plant Training Program	NCAC Title 23 Chapter 2, Rule 2E.0402
The University of North Carolina System	
Vocational/Technical Training	G.S. 116. Higher Education
Teacher Preparation	G.S. 116. Higher Education
Department of Commerce	
JTPA Title II-A Employment & Training	P.L. 97-300, Job Training Partnership Act 20 CFR, Parts 626-638 North Carolina Department of Natural Resources and Community Development Regulations

TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
JTPA Title II-B Summer Youth Employment	P.L. 97-300, Job Training Partnership Act 20 CFR, Parts 626-638 North Carolina Department of Natural Resources and Community Development Regulations
JTPA Title III--Dislocated Worker Pgrm.	P.L. 97-300, Job Training Partnership Act 20 CFR, Parts 626-638 North Carolina Department of Natural Resources and Community Development Regulations
JTPA Title IV-C Veteran's Program	P.L. 97-300, Job Training Partnership Act 20 CFR, Parts 626-638 North Carolina Department of Natural Resources and Community Development Regulations
Older Worker Job Search--Title I(C)	P.L. 97-300, Job Training Partnership Act 20 CFR, Parts 626-638 North Carolina Department of Natural Resources and Community Development Regulations
Labor Market Information	G.S. 143-3.5, Section 41
SOICC	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended P.L. 97-300, Job Training Partnership Act
Institutionalized Offenders Project	P.L. 97-300, Job Training Partnership Act
Department of Correction	
Pre-Employment Training	G.S. 148-22.1
Community Readiness Training (CRT)[a]	

TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
Vocational Education	G.S. 148-22.1
Apprenticeship	G.S. 148-22.1
Department of Labor	
Preapprenticeship	P.L. 97-300, Job Training Partnership Act
Apprenticeship	G.S. 94-1 through 94-11 NCAC Article 13, Chapter 14
Department of Human Resources	
Work Incentive Program (WIN)	45 CFR 224
Community Work Experience (CWEP)/Workfare	45 CFR 238
Vocational Rehabilitation Services	P.L. 93-112, Rehabilitation Act of 1973, as amended 34 CFR 361 and 362
JTPA 3% Older Individuals Program	P.L. 97-300, Job Training Partnership Act 20 CFR Parts 626-638 41 CFR Part 29-70
Youth Services	
Vocational Education	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended G.S. Chapter 115C G.S. Chapter 134A-20 P.L. 97-300, Job Training Partnership Act

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[a] CRT

TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
Youth Services Vocational Internship Program	Article 3. G.S. 143B-136
Department of Natural Resources and Community Development	
Employment and Training (DET)	P.L. 97-300, Job Training Partnership Act, as amended P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended North Carolina Employment and Training Act Senate Bill 1 P.L. 97-404, Technical Amendment to Job Training Partnership Act
Employment and Training (RSDAs)	P.L. 97-300, Job Training Partnership Act, as amended P.L. 98-524, Carl D. Perkins Vocational Education Act North Carolina Employment and Training Act Senate Bill 1 P.L. 97-404, Technical Amendment to Job Training Partnership Act
Economic Opportunity	Unavailable
Community Assistance	G.S. 143-323 G.S. 143B-276 42 U.S.C. 5301 42 U.S.C. 5306(d) 24 CFR 570.489
JTPA Title IV	
Migrant Workers	P.L. 97-300, Job Training Partnership Act, as amended
American Indians	P.L. 97-300, Job Training Partnership Act, as amended
Job Corps	P.L. 97-300, Job Training Partnership Act, as amended

TABLE E.1.(continued). SOURCES OF STATUTORY RESPONSIBILITY AND AUTHORITY FOR VOCATIONAL/TECHNICAL EDUCATION

State Agency/Commission (and, where applicable, major program areas)	Sources of Statutory Responsibility
State Advisory Council on Education	P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended North Carolina Executive Order No. 3
North Carolina State Job Training Coordinating Council	P.L. 97-300, Job Training Partnership Act P.L. 98-524, Carl D. Perkins Vocational Education Act, as amended North Carolina Employment and Training Act Senate Bill 1 P.L. 97-404, Technical Amendment to Job Training Partnership Act
Private Sector Employment and Training	Article 39, G.S. Chapter 115C

Source: Office of Management and Budget Survey, May 1986; supplemented by RTI follow-up activities.

Appendix F

Descriptive Findings Related to Funding Mechanisms for Vocational/Technical Education

Vocational/technical education and training in North Carolina is primarily funded by federal, State, and local government. Table F.1 shows the 1985-1986 estimated expenditures for employment and training in North Carolina.

1. Public School System Funding

Federal funding to the Public School System is primarily through the Carl D. Perkins Vocational Education Act and the Job Training Partnership Act. Both of these acts contain detailed guidelines for use of the funds and, for some funding categories, matching funds are required from the State. The State distribution of federal vocational education funds between the Community College System and the Public School System is described in Table F.2.

State vocational education funds for the Public School System are primarily provided through the continuation budget and the expansion budget and may be provided through the State Public School Fund. Basically, the continuation budget provides the funds necessary for maintaining the status quo (although it is the prerogative of the legislature to reduce the continuation budget). The expansion budget provides the funds necessary for adding such things as new programs and new equipment. State Public School Funds provide for all public education in North Carolina. Local school systems decide whether these monies will be used for vocational education within their systems.

The majority of State budgets for Public School System education (including vocational education) are tied to the "ADM", average daily membership, which is defined in the North Carolina Public Schools Statistical Profile, 1986 as: "The total number of school days within a given term or school year that a student's name is on the current roll of a class, regardless of his being present or absent, is the "number of days in membership" for that student. The sum of the "number of days in membership"

TABLE F.1. 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
Department of Public Instruction and Local Education Agencies					
Vocational Education	110,545,288	-0-	-0-	-0-	110,545,288
Perkins Title II - Administration	1,158,803	-0-	1,158,803	-0-	2,317,606
Perkins Title II - Handicapped	1,462,767	-0-	1,462,767	-0-	2,925,534
Perkins Title II - Disadvantaged	1,287,235	-0-	3,218,088	-0-	4,505,323
Perkins Title II - Sex Equity	-0-	-0-	511,969	-0-	511,969
Perkins Title II - Program Improvement	-0-	-0-	9,377,055	-0-	9,377,055
Perkins Title II - Home Economics	-0-	-0-	980,688	-0-	980,688
Job Placement Center	834,845	3,328,437	-0-	-0-	4,163,282
JTPA Extended School Day	163,468[a]	1,503,017	-0-	-0-	1,666,485
Transition (Project Help)	-0-	607,222	-0-	-0-	607,222

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[a] Dropout prevention

TABLE F.1.(continued). 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
JTPA State Coordination and Administration	-0-	659,768	-0-	-0-	659,768
Other JTPA II-A Employment & Training	Unavailable -- Contracted by local Service Delivery Areas with local school systems				
Department of Community Colleges and Local Community Colleges and Technical Institutes					
Vocational & Technical Education	103,538,211	-0-	3,387,618	-0-	106,925,829
Continuing Education, Occupational Ext.	16,533,434	-0-	-0-	-0-	16,533,434
New & Expanding Industry Training	4,818,141	-0-	-0-	-0-	4,818,141
Human Resources Development	3,240,348	100,000	-0-	-0-	3,240,348
Perkins Title II - Adult Training	-0-	-0-	2,632,981[a]	-0-	2,632,981
Perkins Title II - Single Parents	-0-	-0-	1,865,028[a]	-0-	1,865,028
Perkins Title II - Disadvantaged	-0-	-0-	1,609,044	-0-	1,609,044

TABLE F.1.(continued). 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
Cooperative Skills Training	1,488,000	-0-	-0-	-0-	1,488,000
JTPA - 8% State Education and Coordination	383,732	695,508	-0-	-0-	1,079,240
Perkins Title II - Handicapped	-0-	-0-	731,384	-0-	731,834
Perkins Title II - Sex Equity	-0-	-0-	255,984	-0-	255,984
Perkins Title II - Criminal Offenders	-0-	-0-	219,416	-0-	219,416
Vo. Ed. Act '63 (Sub Parts II,III, & IV)	-0-	-0-	156,708	-0-	156,708
JTPA - Dislocated Worker	-0-	135,000	-0-	-0-	135,000
In-Plant Training Program	Funded through Occupational Extension Budgets				
JTPA Title II-A Employment & Training	Unavailable -- Contracted by local Service Delivery Areas with local community college institutions				
The University of North Carolina System					
Vocational/Technical Education	Program expenditures data are not currently available at this level of disaggregation.				
Teacher Preparation	Program expenditures data are not currently available at this level of disaggregation.				

TABLE F.1.(continued). 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
Department of Commerce					
JTPA Title II-A Employment & Training	-0-	5,600,000	-0-	-0-	5,600,000
JTPA Title II-B Summer Youth Employment	-0-	3,450,000	-0-	-0-	3,450,000
JTPA Title III--Dislocated Worker Pgrm.	-0-	1,900,000	-0-	1,300,000[b]	3,200,000
JTPA Title IV-C Veteran's Program	-0-	160,000	-0-	-0-	160,000
Older Worker Job Search--Title I(C)	-0-	-0-	-0-	-0-	-0-
Work Incentive Program (WIN)	Unavailable				
Institutionalized Offenders Project	Unavailable				
SOICC	-0-	55,358	101,272[e]	-0-	-0-
JTPA State Coordination & Administration	Unavailable				
Labor Market Information	Not Applicable				

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[b] Matching funds from unemployment insurance, FTE training earnings, and OJT matching payments from OJT subcontractors.
[c] VA and indirect cost
[d] Apprenticeship Forum
[e] NOICC Basic Assistance Grant

TABLE F.1.(continued). 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
Department of Correction					
Pre-Release Training/ Community Readiness Training (CRT)[f]	3,379,159	-0-	-0-	-0-	3,379,159
Vocational Education	1,084,569	-0-	-0-	-0-	1,084,569
Department of Labor					
Preapprenticeship	-0-	2,447,886	-0-	-0-	2,447,886
Apprenticeship	782,485	-0-	45,511[c]	1,303[d]	829,300
Department of Human Resources and Local County Departments of Social Services					
Work Incentive Program (WIN)	-0-	-0-	1,582,565	443,824	2,026,389
Community Work Experience (CWEP)/Workfare	159,199	-0-	318,398	159,199	636,796
Vocational Rehabilitation Services	20,365,565	-0-	29,175,793	1,051,502	50,592,860
JTPA 3% Older Individuals Program	-0-	299,406	-0-	-0-	299,406

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[e] Local and inter-agency funds
[f] CRT is no longer offered
[g] Actual expenditures

TABLE F.1.(continued). 1985-1986 ESTIMATED EXPENDITURES FOR EMPLOYMENT AND TRAINING IN NORTH CAROLINA

State Agency/Commission	State Funds	JTPA Funds	Other Federal Funds	Other Funds	Total Funds 1985-1986
Youth Services Vocational Education	953,531	-0-	-0-	-0-	953,531
Vocational Internship Program	Funded through Division of Youth Services				
Department of Natural Resources and Community Development					
Employment and Training (DET)[g]	-0-	2,810,669	-0-	-0-	2,810,669
Employment and Training (RSDAs)[g]	-0-	1,579,136	-0-	-0-	1,579,136
Economic Opportunity	55,377	-0-	1,407,506	-0-	1,462,883
Community Assistance	-0-	-0-	-0-	-0-	-0-
JTPA Title IV[h]					
Migrant Workers (PY85)		2,891,199			
American Indians (PY86)		2,214,253			
Job Corp					
State Advisory Council on Vocational Education	-0-	-0-	169,045	-0-	169,045
North Carolina State Job Training Coordinating Council	Not available				

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[g] Actual expenditures

[h] JTPA Title IV funds flow directly from the Federal Government to local agencies within the state.

Source: Office of Management and Budget Survey, May 1986; supplemented by RTI follow-up activities.

TABLE F.2. STATE DISTRIBUTION OF FEDERAL VOCATIONAL EDUCATION FUNDS

State board of Community Colleges and State Board of Education policies for distributing federal funds allocated to the State from the Vocational Education Acts are as follows:

1. The following funds to be distributed one-third to the community college system and two-thirds to the public school system.

    a. part A: disadvantaged;
    b. part A: handicapped;
    c. part A: subpart 2;
    d. part A: subpart 3:
    e. part A: subpart 4;

2. Part A. Consumer and homemaking funds, 100 percent to be used in the public school system;

3. Part A. Post-secondary set-aside, 100 percent to Community College System;

4. In the event that the Community College System or the public school system is unable to use the federal funds as provided for in this Rule as determined by the State President and the State Superintendent, the excess funds may be used by the other system as needed.

Source: North Carolina Administrative Code 2D.2314 for all students divided by the number of school days in the term yields ADM. The final average daily membership is the aggregate of the total days in membership for all students over the school year divided by the number of days school was in session." Generally, to distribute funds, a dollar value per ADM is calculated by dividing the total state allocation for a budget line item (e.g., non-matching expansion funds) by the total state ADM. A school system's portion is then calculated by multiplying its ADM by the dollar value per ADM. Local county commissioners also provide funds for vocational/technical education and training in accordance with local funding mechanisms.

2. Community College System Funding

Federal funds for vocational/technical education in the Community College System come primarily through provisions of the Carl D. Perkins Vocational Education Act and the Job Training Partnership Act. The state distribution of federal vocational education funds between the Community College System and the Public School System is described in Table F.2. The state distribution of Job Training Partnership Act funds is described later in this appendix.

State funding for vocational/technical education in the Community College System is driven by student "membership" hours in courses of instruction. A student is in class membership when he/she: (1) enrolled as evidenced by payment of the applicable tuition and fees, or obtained a waiver as defined by the Administrative Code; (2) attended one or more classes prior to the 20 percent point in the class; and (3) has not withdrawn or transferred prior to or on the 20 percent point in the class. Student hours in class membership are obtained by multiplying the number of students in membership at the 20 percent point in the class by the number of hours the class or laboratory is scheduled to meet, as listed in the catalog or other official institutional documents. A membership hour is a unit of instruction. Sixteen hours in membership per week for four quarters (704 membership hours) constitutes a full-time equivalent (FTE) student in the Community College System.

Various categories of full-time equivalents (FTEs) are used in the preparation of budgets and to determine distribution of state funds. The budget full-time equivalent (B/FTE) is used to prepare the operating budget and to provide for an equitable distribution of the operating funds allocated by the State Board to the institutions. The equipment full-time equivalent

(E/FTE) is used to prepare the equipment budget and to provide for an equitable distribution of the equipment funds allocated by the State Board to the institutions. The library full-time equivalent (L/FTE) is used to prepare the library budget to provide for an equitable distribution of library funds that are allocated for the purchase of library books and audiovisual materials. The credit hour full-time equivalent (H/FTE) is used in furnishing data to the North Carolina Commission on Higher Education Facilities and the University of North Carolina. The construction full-time equivalent (C/FTE) is used to determine construction priorities and institutional eligibility for federal and state construction funds for the institutions.

In preparation of the operating budget, funds for curriculum instruction are allotted to each institution based on the following formula: (1) instructors--one per 22 FTE rounded to the nearest one-tenth position at the currently appropriated salary unit value; (2) employee benefits--based on appropriate levels for social security, retirement, and hospitalization; (3) other costs per FTE based on appropriated levels for travel and supplies and materials.

Funds for instructional support and administration are allotted to each institution on the following formulas. First, the base allotment for each institution is: (1) salaries--president (1.0) on president's salary schedule; senior administrators (4.0) at the current salary unit value; instructional support personnel (2.6) at the current salary unit value; clerical personnel (3.3) at the current salary unit value; (2) employee benefits--based on appropriated levels for social security, retirement and hospitalization; (3) other costs--a sum of thirteen thousand dollars ($13,000) for travel for trustees, president, administrators, and support personnel; institutional dues; graduation expenses; etc.

Second, an additional allotment for each curriculum and extension FTE for each institution is based on the following: (1) salaries--senior administrators: 2.0 per 1,250 FTE (to the nearest one-tenth position) at the current salary unit value; instructional support personnel: 6.0 per 1,000 FTE (to the nearest one-tenth position) at the current salary unit value; clerical personnel: 6.0 per 1,000 FTE (to the nearest one-tenth position) at the current salary unit value; (2) employee benefits--based on appropriate levels for social security, retirement and hospitalization; (3) other costs per FTE based on appropriated levels for travel, supplies and materials, postage, printing and binding, magazines and newspapers, equipment repairs, advertising and publicity, etc.

Detailed procedures for budget requests and distribution of funds for community college library and equipment budgets are included the North Carolina Administrative Code. Responsibilities for local financial support of community college institutions are outlined in the General Statues of North Carolina, and include such things as provision of operating and maintenance funds for buildings. The General Statues also outline the tax-levying authority of each institution to provide adequate funds to meet these responsibilities.

Each community college or technical institute institution prepares and submits to the State an annual budget. Appropriation requests for the operating budget for each community college or technical institute are composed of continuation budget requests and expansion budget requests. The continuation budget request is based on the number of FTE and amount per FTE currently appropriated and increases in the continuation budget as directed by the Office of State Budget and Management. The expansion budget request may consist of, but is not limited to, the following items: (1) an adjustment in the number of FTEs in existing programs based on the difference between the official FTE projections of the State Board and the existing level of FTEs requested in the continuation budget, (2) an adjustment in expenditure per FTE, (3) additional funding for new special programs of instruction and for funding FTEs in these new programs. After the institutions have been notified of the actual allotment of State funds and the restrictions that may be imposed upon the expenditure of these funds, a revised budget is prepared and submitted to the State in accordance with North Carolina laws.

. Of note is that an allotment reserve is provided for by the North Carolina Administrative Code 2D.0300. A reserve amounting to one percent of FTEs appropriated for both curriculum and extension programs is retained by the State Board of Community Colleges for the purpose of making later allocations.

Transfers between community college budget items are addressed in the North Carolina Administrative Code 2D.0300. The following line items as they relate to state funds cannot have transfers made into them without prior approval of the State Board: (1) college transfer, (2) recreational programs,

(3) plant operations and maintenance, and (4) capital outlay. The following line items as they relate to state funds cannot have transfers made out of them without prior approval of the State Board: (1) adult high school, (2) plant operations and maintenance, and (3) capital outlay. The following line items as they relate to state funds cannot have transfers made out of them except with the approval of the Department: (1) new industry training and (2) employee benefits.

3. University System Funding

Funding for the University of North Carolina differs from that of the Public School System and the Community College System in two primary ways. One, there is no systematic funding mechanism for local support. Discounting Federal grants as well as tuition and fees, university institutions are supported by the State. Two, state-funding is not formula driven based on a measure of student membership in classes. Instead, funding is sought for the total institution. Budgets may be in terms of such things as regular instruction, which contributes to the cost of vocational teacher preparation, or in terms of special activities, which covers such things as curriculum expansion in vocational/technical courses at the Agriculture Institute at North Carolina State University. Decisions regarding allocations of funding within an institution are primarily made at the institution-level.

4. Other Program and Agency Funding

Job Training Partnership Act funding for vocational/technical education and training in North Carolina occurs primarily through distributing the 8 percent set-asides for state and local education agencies and the 78 percent SDA allocations. For Program Year 1986-1987, the Division of Employment and Training allocated the 8 percent set-aside funds "to the State Board of Education and the State Board of Community Colleges as the state educational agencies responsible for employment and training," except for a portion of the funds which were retained by the Division of Employment and Training to support coordination activities.

To distribute its portion of the 8 percent set-aside funds, the Department of Community Colleges requested proposals from local community college institutions. Funds were awarded on the basis of these proposals.

The Division of Support Programs within the Department of Public Instruction serves as a liaison between the Department of Public Instruction, the Division of Employment and Training, and the Public School System. The distribution of programmatic funding follows guidelines established by the Division of Employment and Training.

SDA 78 percent allocations flow directly from the federal government to local Service Delivery Areas (SDAs), which determine how the funds are to be spent within the guidelines set forth in the Job Training Partnership Act. SDAs may contract with local community colleges and local school systems for the provision of job training services, such as institutional skills training and school-to-work transition programs.

Programs under the Department of Human Resources support client participation in vocational/technical education. For example, the Division of Vocational Rehabilitation funds transportation for clients to attend classes. None of the identified programs in this department receive federal funding from the Job Training Partnership Act nor from the Carl D. Perkins Vocational Act. At the state level, funding is through the Department of Human Resources budget. For example, the Division of Youth Services budget supports the vocational/ technical education and training provided for youthful offenders.

The Department of Commerce receives some JTPA funding to support staff participation in JTPA Title III Dislocated Worker programs. The Employment Security Commission is federally funded, which means that job placement, labor market information, and other services provided by this agency are federally-funded. The Employment Security Commission is also a major administrator of JTPA programs, (such as the JTPA Title III Dislocated Worker Program) and of Work Incentive (WIN). In some cases, local community colleges and local public school systems may be contracted by the Employment Security Commission to provide services under the Job Training Partnership Act.

The Department of Correction receives appropriations from the General Assembly of North Carolina to support Pre-Release Training and vocational education. Local community colleges and technical institutes supply approximately 95 percent of the vocational education instructors for courses within the Department of Correction. In these cases enrolled students generate FTEs for the specific community college institutions that are supplying the instructors. For these courses the Department of Correction provides facilities and some of the equipment. The local community colleges or technical institutes provide the balance of the equipment. For some vocational education courses, the Department of Correction provides the instructors, facilities, and equipment from the General Assembly appropriation. The Department of Correction indirectly receives a small amount of funding from the Carl D. Perkins Vocational Education Act by submitting proposals to the Department of Community College.

Funds to support the Department of Labor apprenticeship program are from two sources: (1) an appropriation by the General Assembly of North Carolina and (2) a direct contract with the U.S. Veterans Administration. Participating employers pay the salaries of the apprentices. Funding supports coordination, promotion, record-keeping, and other activities described in Appendix D of this report. Local Service Delivery Areas contract with the Department of Labor for the pre-apprenticeship program. For this program, JTPA funds reimburse employers for 50 percent of the participants' salaries.

Appendix G

Descriptive Findings Related to Articulation of Vocational/Technical Education

One major basis for articulation of vocational education among all agencies is provided by the public school laws of North Carolina. Under these laws (Article 10.G.S. Chapter 115C-154), the State Board of Education is required to prepare a Master Plan for Vocational Education, which is "to be updated periodically, and which is to ensure minimally, among other things that:

> Articulation will occur with institutions, agencies, councils, and other organizations having responsibilities for manpower development.

In response to this mandate, the State Board of Education proposed in the North Carolina State Plan for Vocational Education, Fiscal Years 1986-1988 that the State Board appoint The State Vocational Education Planning and Coordination Committee to expedite the planning and coordination requirements of the Carl D. Perkins Vocational Education Act, P.L. 98-524. Membership composition and functions of this committee are given in Tables G.1 and G.2.

A second major basis for articulation of vocational education and training among all agencies is provided by Section 122 of the Job Training Partnership Act. The duties of the North Carolina State Job Training Coordinating Council, as set forth in this section, include a planning, coordinating, and monitoring function as follows:

> In order to assure objective management and oversight, the State council shall not operate programs or provide services directly to eligible participants, but shall exist solely to plan, coordinate, and monitor the provision of such programs and services.

Currently, several state and local agencies provide JTPA-funded programs and services. Because of this, the Council has coordinating responsibilities that involve these agencies.

In October, 1984, the North Carolina Job Training Council created the Interagency Coordinating Committee. The committee's purpose is "to identify barriers to coordination among employment and training-related agencies and to propose workable solutions to those problems". The committee has established

TABLE G.1. FUNCTIONS OF THE STATE VOCATIONAL EDUCATION PLANNING AND COORDINATION COMMITTEE

(a) Representation and Membership of the Committee
The committee membership will consist of individuals who possess administrative authority/decision making positions he or she represents in the following agencies:

(1) Job Training Partnership Act - N. C. Department of Natural Resources and Community Development, Division of Employment and Training;

(2) Adult Education Act - N. C. Department of Community Colleges, Continuing Education Services;

(3) Elementary and Secondary Education Act of 1965 - N. C. Department of Public Instruction;

(4) Education of the Handicapped Act - N. C. Department of Public Instruction, Division of Exceptional Children;

(5) Rehabilitation Act of 1973 - N. C. Department of Human Resources, Division of Vocational Rehabilitation;

(6) Apprenticeship - N. C. Department of Labor, Division of Education and Training;

(7) Adult Correction - N. C. Department of Correction;

(8) Youthful Offenders - N. C. Department of Human Resources, Division of Youth Services;

(9) Sex Equity - N. C. Department of Administration, Council on the Status of Women;

(10) Industry - N. C. Department of Commerce, Industrial Development;

(11) Labor Market - N. C. Department of Commerce, Employment Security Commission, State Occupational Information Coordinating Committee;

(12) State Council on Vocational Education.

(b) Terms of Membership
The term of membership for each member will be three years. Membership will be rotating. Therefore, the initial term of membership will be determined at the first meeting by lottery. Those drawing numbers 1 - 4 will serve for three years. Those drawing numbers 5 - 8 will serve for two years. Those drawing numbers 9 - 12 will serve for one year. Each appointment thereafter will serve for three years. The Agency, Department, Division, or Council will recommend the replacement when a member's term expires. The State Director of Vocational Education shall serve as chair of this committee.

Source: North Carolina State Plan for Vocational Education, Fiscal Years 1986-1988.

TABLE G.2. MEMBERSHIP COMPOSITION AND TERMS FOR THE STATE VOCATIONAL EDUCATION PLANNING AND COORDINATION COMMITTEE

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(1) Assist the State Board to implement the purpose of the Carl D. Perkins Vocational Education Act, PL 98-524.

(2) Provide assistance for developing funding procedures to ensure maximum utilization of resources for providing services and activities to eligible recipients.

(3) Recommend coordination techniques which will prevent duplication of effort with other boards, agencies, councils, groups or individuals.

(4) Provide assistance in the development of policies and procedures that will ensure improvement, expansion and evaluation of programs in relation to the individual needs of participants and the employment needs of the State.

(5) Recommend procedures/strategies that will ensure the provision of services and activities to individuals without regard to race, sex, national origin or handicapping condition.

(6) Provide assistance in the identification of labor market needs in existing, expanding and new occupations and the job skills required to meet those needs.

(7) Provide assistance in the identification of other education/training programs outside the purview of secondary and postsecondary education.

(8) Provide assistance in the identification of techniques/strategies to improve services and activities for disadvantaged, handicapped, and limited English proficiency individuals.

(9) Provide assistance in the identification of techniques/strategies to improve services and activities for single parents and homemakers and to overcome sex bias and stereotyping in employment and training.

(10) Provide assistance in the identifiction of techniques/strategies to improve services and activities for adults in need of training and retraining.

(11) Provide assistance in the identification of techniques/strategies to improve services and activities for criminal offenders in correctional institutions.

Source: North Carolina State Plan for Vocational Education, Fiscal Years 1986-1988.

three major goals as a means of fulfilling its purpose. These are to identify, discuss, and make recommendations regarding issues relating or affecting (a) policy, (b) planning and program design, and (c) information sharing.

The committee is composed of representatives from specified state agencies viewed to have a direct interest in employment and training. The state agencies represented are: The Department of Public Education, The Department of Community Colleges, The Department of Human Resources, The Department of Labor, the Employment Security Commission, The Department of Correction and The Department of Natural Resources and Community Development. The committee also includes four service delivery area representatives.

A third major basis for articulation of vocational education among all agencies is provided by the requirement of the Job Training Partnership Act (Section 121) for the establishment of criteria to coordinate activities under the Act "with programs and services provided by State and local education and training agencies (including vocational education agencies), public assistance agencies, the employment service, rehabilitation agencies, postsecondary institutions, economic development agencies, and such other agencies as the Governor determines to have a direct interest in employment and training and human resource utilization within the State." These criteria are a required part of the Governor's Coordination and Special Services Plan, which is periodically prepared for two program years and submitted to the Secretary of Labor of the United States.

The North Carolina Coordination Criteria as established under the Job Training Partnership Act for Program Years 1986-1987 state that "the purpose of the coordination criteria is to provide direction to Service Delivery Areas and to those state and local agencies determined to have a direct interest in employment and training and human resource utilization." The coordination criteria are as follows:

> "The Governor and the Job Training Coordinating Council recommend that Service Delivery Areas and the local agencies involved use the Private Industry Councils as primary mechanisms for coordination. Private Industry Councils include representatives from businesses, local education agencies, and/or local community colleges, the employment service, vocational rehabilitation agencies, economic development entities, organized labor and community based organizations. An effective Private Industry Council will develop a system and encourage a climate

> for information sharing and joint planning among all agencies and organizations engaged in employment and training activities. The Private Industry Council includes representation from a broad range of local agencies. Special efforts should be taken to ensure that the designated representative on the Private Industry Council does, in fact, represent all LEAs or all community colleges, etc. within the SDA. Similarly, additional efforts should be taken to ensure coordination with those local employment and training agencies, such as social services, veterans groups, corrections, local apprenticeship offices which are not required by law to be represented on the Private Industry Council."

Additionally, the North Carolina coordination criteria contain a directive from the Governor "that state agencies commit to the coordination effort and inform, actively assist, and monitor the activities of their local agencies to ensure that coordinative actions are taking place between the Service Delivery Areas and appropriate local agencies." The coordination criteria outline coordination requirements to be followed by Service Delivery Areas and the following state and/or local agencies:

-- The Department of Public Education and local education agencies

-- The Department of Community Colleges and local community college institutions

-- The Department of Labor

-- The Department of Correction

-- The Department of Commerce including

  - The Division of Industrial Development, other related divisions and other economic development entities

  - The Employment Security Commission

-- The Department of Natural Resources and Community Development including

  - The Division of Economic Opportunity and community action agencies

  - The Division of Community Assistance and recipients of Small Cities Community Development Block Grant Funds

  - The division of Employment and Training and service delivery areas

- The Department of Human Resources including
  - The Division of Social Services and local county departments of social service
  - The Division of Vocational Rehabilitation
  - The Division of Aging and areas agencies on aging
- The Department of Administration including
  - The Division of Veterans Affairs and other veterans service agencies
- Community-Based Organizations

Currently a major impetus for articulation of vocational education between secondary school programs and community college programs in North Carolina is provided by the Huskins Act (House Bill 1044) which was enacted by the North Carolina General Assembly in 1983. This bill permits the establishment of cooperative programs between local school boards and local community college institutions in the geographical areas they serve "to provide for college courses to be offered to qualified high school students with college credits to be awarded to those high school students upon the successful completion of the courses." An example of these programs is provided by the Dual Enrollment Program at Gaston College, which is described in the Gaston College Catalog as follow:

> High school junior and senior class students may be admitted to some courses at Gaston College under certain conditions. Students must be sixteen years old or older and must have completed a minimum of eight (8) units which include English 9 and 10. Students must have the approval of the superintendent or his designee of their public school system and the Director of Admissions of Gaston College for credit courses or the Dean of the Continuing Education Division for noncredit courses. Students must be taking at least three courses at their high school and be making appropriate progress toward graduation as determined by the school principal. For additional information concerning special admission to Gaston College, students should contact their high school principal. All admissions are contingent upon availability of adequate classroom space.

According to the Department of Community Colleges, as a result of the Huskins Bill, 70 cooperative agreements between 40 community college institutions and 63 school systems had been developed and served 2000 students by early 1986.

North Carolina Administrative Code (2E.0500) lists the purposes for which programs for articulation between the Community College System and public schools shall be designed. The entire policy statement is given in Table G.3. Funding and other procedures for articulation from the North Carolina Administrative Code (2E.0500) are given in Table G.4.

In addition to cooperation requirements that involve all agencies, cooperation specifically between secondary school programs and JTPA programs occurs in the distribution of JTPA funds within the State. As shown in Table F.1 (in Appendix F), three programs within the Division of Support Services of the Department of Public Instruction received funding during 1985-1986 from the JTPA Title II-A 8 percent setasides for State and local education agencies. (These three programs, Job Placement Centers, Extended School Day, and Transition Programs, are described in Appendix D). Additionally, the majority of public school systems in the state receive funds directly from local JTPA Service Delivery Areas (SDAs). (These funds, which come from the 78 percent SDA allocations, support such programs as Exemplary Youth Programs, which are described in Appendix D.) This type of cooperation is encouraged by the Job Training Partnership act which requires that 40 percent of the funds received by each SDA be used for youth between the ages of 14 and 21.

Cooperation between community college programs and university programs occurs primarily through contracts for transferrability of credit. In a recent study of community college institutions, only seven of the 53 institutions responding to the survey reported no formal or contractual agreements with one or more senior institutions to award transfer credit for general education, vocational, or technical programs. The study[1] stated that acceptance of prior work for credit by senior institutions is generally known to vary from institution to institution and, to some extent, from time to time, but it would seem from the increasing number of contractual relationships that senior institutions are more frequently crediting technical institute or college students for work taken in that setting.

Cooperation between community college programs and JTPA programs related to the distribution of JTPA funds occurs at two levels: State and local. As

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1/ See Appendix Item Number 44.

TABLE G.3. POLICY STATEMENT CONCERNING ARTICULATION BETWEEN PUBLIC SCHOOL AND THE COMMUNITY COLLEGE SYSTEM

(a) The State Board of Education encourages formal and informal articulation efforts on a continuing basis between the system of elementary and secondary education and the system of technical institutes and community colleges.

(b) Articulation programs shall be designed to meet one or more of the following purposes:

(1) provide for articulation of subject matter between the secondary and post-secondary institutions;
(2) promote innovation and coordination of both secondary and post-secondary institutions;
(3) provide for articulation between secondary and post-secondary institutions and where appropriate, business, health, agriculture, public service, industry concerns, private schools, and appointed or elected local officials;
(4) develop in all teachers and other participants
(5) Provide an opportunity for joint utilization and sharing, where possible, of physical facilities, equipment and materials available at the secondary and post-secondary levels;
(6) provide for continuous study, evaluation and improvement of articulation efforts between both systems; and
(7) improve public relations at both the secondary and post-secondary level.

(c) Within resources available, the Department of Public Instruction and the Department of Community Colleges will support articulation efforts by providing consultant help, when requested, to local administrative units and to community colleges and technical institutes.

Source: North Carolina Administrative Code (2E.0500).

TABLE G.4. FUNDING AND OTHER PROCEDURES FOR ARTICULATIONS BETWEEN PUBLIC SCHOOL AND THE COMMUNITY COLLEGE SYSTEM

(a) For funding purposes only, the expenditure of available funds will be based on the number of teachers, principals, and supervisors in the public schools in the institution's service area, as designated as ABE, as shown in the latest available allotment information prepared by the division of teacher allotment and general control.

(b) Articulation programs will be financed where possible by approved budget transfers within the institution's budgets. Stipends and travel may be paid to participants not on the public school payroll at the time the programs are conducted.

(c) The maximum amount that may be expended where funds are available for articulation programs will be two thousand dollars ($2,000) or seven dollars ($7.00) per professional public school employee (as defined in (a) of this Rule) in the institution's ABE service area, whichever is larger. In many cases, satisfactory programs may be conducted without transfer or special allocation of funds. Funds in excess of the above amounts will require special State Board of Education approval.

(d) In cases where the amount of funds per institution by budget transfer is limited, or for some other justifiable reason is not equal to two thousand dollars ($2,000) and the institution wishes to conduct an articulation program, the difference may be allocated to the institution upon request by special allocation from state funds, subject to the availability of such funds.

(e) Prior to implementing a program, the president will provide evidence to the State President of the Department of Community Colleges that articulation efforts will be coordinated with local school officials. A summary of the articulation program conducted, to include an evaluation report, will be submitted at the end of the program.

(f) All programs will be conducted at community colleges and technical institutes, unless there are justifiable reasons for holding the programs elsewhere.

Source: North Carolina Administrative Code (2E.0500).

shown in Table F.1 (in Appendix F) the Department of Community Colleges received funding during 1985-1986 from the JTPA Title II-A 8 percent setasides for State and local education agencies. Local community colleges and technical institutes submitted proposals for use of these funds to the Department of Community Colleges, which awarded the funds.

Additionally, as shown in Table F.1, the Department of Community College may also receive JTPA funds from other sources. In JTPA Program Year 1985-1986, the Department received JTPA Dislocated Worker funds through a contract with the Employment Security Commission, which is the prime contractor for the JTPA Dislocated Worker program. However, this funding to the Department of Community College was not continued for JTPA Program Year 1986-1987. Additionally, individual community college institutions may receive funds directly from local JTPA Service Delivery Areas (SDAs). These funds come from the 78 percent SDA allocations.

Planning for and coordination of vocational education (including JTPA) in the Department of Commerce, including the Employment Security Commission, and JTPA were brought closer together by provisions of the Job Training Partnership Act, which amended the Wagner-Peyser Act for this specific purpose. In North Carolina local Private Industry Councils (PICs) determine employment and training policy for the SDA and review both the Service Delivery Area's (SDA's) Job Training Plan and ESC's Wagner-Peyser substate plan for evidence of coordination and to ensure that the goals and placement programs in both plans complement each other. Wagner-Peyser funds are used in conjunction with resources from the Bureau of Labor Statistics and the State Occupational Information Coordinating Committee to operate a comprehensive labor market information program that facilitates local employment and training planning and economic development efforts. Because the Employment Security Commission has been designated as the prime contractor for Title III Dislocated Worker Program activity, training efforts in SDAs for workers affected by economic and technological dislocations must be coordinated between ESC and the SDAs.

Appendix H

Descriptive Findings Related to Vocational/Technical Education Teacher Preparation

Forty-four North Carolina colleges and universities offer approved teacher education programs of study, ranging from baccalaureate degree to sixth year certificate, that lead to certification in a professional education specialty. According to the Department of Public Instruction, 21 of these (10 private and 11 public higher education institutions) are engaged in preparing vocational education teachers.

Currently, in North Carolina, public higher education institutions tend to locate their vocational teacher education programs in departments other than education. This sharply contrasts with other teacher fields. Of 23,000 baccalaureate/masters/intermediate degrees awarded in teaching fields from 1980 to 1985 in North Carolina senior institutions of higher education, only about 12 percent were obtained outside schools of education. Vocational education degrees, on the other hand, were awarded in schools of home economics, technology, business, and agriculture. In home economics, for example during the 1980-85 period, 98 percent of vocational teaching degrees were from outside schools of education. Table H.1 shows the distribution of programs in the public higher education institutions that prepare vocational teachers, showing the location by school or departments.

As may be seen in Table H.1, North Carolina State University is unique in that all its vocational teachers preparation programs are within the School of Education. In contrast, all business degrees for vocational teachers offered within the State are from business schools, all home economics degrees for vocational teachers are offered from home economics departments, and most trade and industry and industrial arts degrees for vocational teachers are offered in schools or departments of technology. University of North Carolina General Administration data[1] suggest that across all teacher education programs (not just vocational education), the number of graduates from programs offered by education departments has been steadily decreasing since

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[1] See Bibliography Item 8.

TABLE H.1 1986 DISTRIBUTION OF VOCATIONAL TEACHER PREPARATION PROGRAMS IN PUBLIC HIGHER EDUCATION INSTITUTIONS, BY SCHOOL/DEPARTMENT

	School/Department				
Program	Agriculture	Business	Home Economics	Technology	Education
Agriculture	NCA&T				NCSU
Business		ASU; ECU; NCA&T; WCU; NCCU; ECSU; FSU; UNCG WSSU; PSU			
Marketing		ASU; FSU; UNCG		ECU;	NCSU
Industrial Arts				ASU; ECU NCA&T; ECSU; WCU	NCSU
Home Economics			ASU; ECU; NCA&T; NCCU; WSSU; UNCG; WCU		
Pre-Vocational		ASU; WCU; ECU	ASU; WCU; ECU	ASU; WCU; ECU	NCSU
Trade and Industry				ASU; WCU ECU; NCA&T	NCSU
Health Occupations					NCSU

ASU - Appalachian State University
ECU - East Carolina University
NCA&T- North Carolina Agricultural and Technical State University
NCSU - North Carolina State University
UNCG - University of North Carolina at Greensboro
WSSU - Winston-Salem State University
ECSU - Elizabeth City State University
FSU - Fayetteville State University
NCCU - North Carolina Central University
PSU - Pembroke State University
WCU - Western Carolina University

Source: Department of Public Instruction

1975. The number of graduates however from departments other than education has been relatively steady since 1980.

A second area of interest in the preparation of teachers indicated in current related studies is the content of instruction and the process by which effective teachers are prepared for and developed in their professional roles and, particularly, if and how this differs for vocational education. While research indicates some consensus as to what makes an effective teacher, there currently is no single model for effective teaching and no national consensus on teacher preparation requirements. Additionally, some national data indicate that the academic caliber of new teachers is seen to be low and getting worse; this conclusion is based on data that show SAT scores of those choosing education as a major to be lower than for those selecting other majors.[2] At the same time, other information indicates that subject areas for teachers are both changing and becoming more complex, and that student expectations of their teachers are increasing.

Another consideration in the preparation of effective teachers is that of teacher certification. While there are statewide certification requirements for teachers in the public school system of North Carolina, there is evidence of confusion as to the interpretation of these requirements; i.e., confusion as to the exact means by which a teacher can be permitted to teach, and the precise criteria and location of the decision to approve or disapprove certification.[3] While lateral entry and associated provisional, endorsed, or reciprocal certification classifications facilitate local flexibility, these are difficult to define and are, therefore, open to potential abuse.

In a 1986 report, the State Advisory Council on Vocational Education noted that about 15 percent of vocational teachers in North Carolina public schools do not hold a four-year degree. This proportion varied considerably by program area, with the highest in health occupations and trades and industry (19 percent) and the lowest in home economics (1 percent). Teachers in health occupations and trade and industry are more likely to have alternative

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2/ See Bibliography Item 29.

3/ See Bibliography Items 94, 147.

credentials based on specialized training (e.g., RN training) or specific technical or work experience relevant to the subject areas to be taught. This is a reflection of the rapidly-changing technologies in certain content areas, and the necessity to find content-qualified individuals to teach these subjects.

For subbaccalaureate post-secondary institutions, there are no detailed, formal, state-level certification requirements. Each institution sets its own certification requirements within the provision of the accreditation guidelines established by the Southern Association of Colleges and Schools. Recent estimates of the State Advisory Council for Vocational Education suggest that as many as 25 percent of community college faculty members do not hold a four-year baccalaureate degree and as many as 15 percent do not have a two-year associate degree. Since community colleges rely heavily on work experience as preparation for vocational/technical teachers, at least some of the "how to teach" training is provided via in-house mentor training provided by more experienced instructors.

A fourth consideration related to teacher preparation is teacher supply/demand data. Unfortunately, vocational education remains one of the most difficult areas for obtaining good data, particularly regarding supply. Recent initiatives by the Department of Public Instruction have begun to improve this situation significantly. For example, the existing teacher certification file of 240,000 records is being reduced to those most likely to seek employment in teaching, and consideration of factors such as in-migration of teachers from other states is being included as a factor in determining supply. At present however, data on vocational teacher supply are restricted largely to information on certification and degrees granted from higher education institutions within the state. Analysis of the supply and demand of North Carolina public school teachers are currently ongoing within the University of North Carolina and the Department of Public Instruction. Only partial results are available at this time. A full report will be forthcoming later in 1986 from the Department of Public Instruction and will include more detailed estimates of both supply and demand for vocational education teachers.

Teacher supply at the secondary level currently is defined as outputs from professional education programs at institutions of higher education in North Carolina. This definition, constrained by lack of data, excludes teachers trained outside this state, non-degreed teachers, and unemployed or temporarily out-of-the-labor-force individuals who in fact constitute a considerable pool of actual or potential supply. Teacher supply can be estimated from number of degrees conferred, number of students enrolled in teacher training programs, number of candidates for professional certification, or some combination of these. Calhoun[4] reports that from 1970 to 1983, vocational teacher education production in North Carolina declined from 1075 in 1970 to 216 in 1983, a reduction of about 80 percent. There are indications that this trend is being reversed, however. A report by the State Advisory Council on Vocational Education states that enrollment in vocational education degree programs is increasing. Furthermore (as may be noted in Table H.2), numbers of baccalaureate degrees conferred in industrial arts, technical and industrial programs have increased at six public Universities.

Table H.2 NUMBER OF BACCALAUREATE DEGREE CONFERRED IN INDUSTRIAL ARTS, TECHNICAL and INDUSTRIAL VOCATIONAL TEACHER PREPARATION PROGRAMS AT SIX NORTH CAROLINA PUBLIC UNIVERSITIES, 1979-1984

Institution	1979-80	1980-81	1981-82	1982-83	1983-84
Appalachian State University	82	59	61	66	61
Eastern Carolina University	64	72	90	133	150
Eastern Carolina State University	21	19	17	19	22
North Carolina Agricultural and Technical University	69	88	58	86	93
North Carolina State University	24	17	21	17	26
Western Carolina University	61	54	71	68	71

4/ See Bibliography Item 27.

Table H.3 shows the "first-choice" certification areas by gender for vocational education teacher candidates who completed their program in 1985, and also for those who expect to complete after 1985.

Occupational demand for vocational teachers currently is defined as the number of positions, either actual (including both part-time and full-time), or full-time equivalent for a given year. Projected demand is defined as the number of positions to be filled by year and vocational program area. This definition does not include potential positions that might be filled by professionally trained vocational educators in the military or the private sector. Demand for secondary schools is expressed in current statistics as employment positions in public schools in the state. Table H.4 shows the number and percentage of total of vocational teachers employed in public secondary schools in 1984-85. In addition, since some teachers are part-time, the employment by program area is adjusted for full-time equivalency, with the number in the third column representing total FTE positions. A five year average FTE employment figure is included in the final column for the period 1980-1985. As shown in this table, approximately two-thirds of all secondary school vocational teachers are employed in three program areas, business and office, home economics, and trade and industry. Over 6400 persons were teaching vocational education in North Carolina in 1984-85, for a total of just over 5000 FTE positions. In the majority of program areas, the 1984-85 FTE estimate is approximately equal to or slightly above the five year average FTE employment figure for 1980-85. Examination of the actual data by program area (not shown here) indicates that FTE employment of certified personnel has decreased steadily in agriculture (by 15 percent since 1978-79), decreased somewhat less in home economics, trade & industry, pre-vocational and handicapped or disadvantaged, remained about the same in health occupations and marketing, and increased by about 38 percent in industrial arts and 9 percent in business.

Turnover among certified vocational teachers is variously estimated at about 20 percent annually[5] to between 8 percent and 9 percent across all vocational programs by the Department of Public Instruction. Data on percent

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[5] See Bibliography Item 27.

TABLE H.3 1984-85 CANDIDATES FOR PROFESSIONAL CERTIFICATION BY CHOICE OF CERTIFICATION AREA

Certification Area	Number Completed Programs 1984-85			Number to Complete Programs After 1984-85			Grand Total		
	Total*	Male	Female	Total	Male	Female	Total	Male	Female
Agriculture	45	36	9	78	65	13	123	101	22
Agriculture Technology	0	0	0	1	1	0	1	1	0
Home Economics	48	0	48	54	0	54	102	0	102
Vocational Director	4	3	1	6	4	2	10	7	3
Health Occupt. Education	0	0	0	4	1	3	4	1	3
Marketing	40	7	32	37	16	21	77	23	53
Trade Preparatory	12	12	0	23	21	2	35	33	2
Introduction to Trades	2	2	0	0	0	0	2	2	0
Industrial Cooperative Training	8	6	2	13	12	1	21	18	3
Vocational Business Education	22	2	20	22	1	21	44	3	41
Handicapped	2	2	0	1	0	1	3	2	1
Pre Vocational	13	1	12	8	2	6	21	3	18
Disadvantaged	2	0	2	0	0	0	2	0	2
Industrial Arts	112	94	18	72	63	9	184	157	27
No Area Of Choice Reported	64								
Total	374	165	144	319	186	133	629	351	277

* sex classification not reported for one marketing candidate

Source: University of North Carolina General Administration

TABLE H.4 1984-1985 OCCUPATIONAL EMPLOYMENT OF VOCATIONAL TEACHERS IN NORTH CAROLINA PUBLIC SECONDARY SCHOOLS

Program Area	Number Employed	Percent	FTE	Average Employed*
Agriculture	391	0.06	355	375
Business & Office	1524	0.24	1291	1234
Home Economics	926	0.15	855	912
Marketing	312	0.05	185	183
Trade & Industry	1440	0.22	1215	1228
Health Occupations	148	0.02	148	147
Prevocational	918	0.14	608	720
Industrial Arts	400	0.06	297	271
Vocationally Handicapped	348	0.05	225	221
Total	6443	1.00	5179	5291

* five year average of FTE employment 1980-85
Source: Department of Public Instruction

of persons leaving FTE employment by vocational programs area are shown in Table H.5. According to these figures, in the last seven years the turnover rate has ranged from a high of 18 percent in industrial arts in 1978-79 to a low of 5.56 percent in business in 1983-84. Over all vocational programs, the turnover rate declined to a low of less than 8 percent in 1982-83, but appears to be on the rise towards 9 percent in 1984-85. If past trends persist, the rate is expected to continue to rise in the immediate future.

Projected occupational demand for vocational education teachers in public secondary schools for the next five years is represented in Table H.6. The table shows total FTE staffing requirements and projected numbers of new hires 1986-87 through 1990-91. Among factors considered in these projections by the Deaprtment of Public Instruction are student enrollment patterns, trends in student interest and demands for courses, student-teacher staffing ratios, and policy and funding decisions such as implementation of the Basic Education Program, new graduation requirements or admission standards, as well as anticipated reductions in federal funding. The data show the largest number of new hires over the next five years to be in business education and trade & industry. The bulge in requirements in 1989-90 is due to the assumption that the Basic Education Program will be fully implemented.

Supply/demand estimates are not presently available for postsecondary vocational education as there are no detailed formal requirements or procedures at the State level for certification in the subbaccalaureate postsecondary institutions. Each institution sets its own requirements within the provisions of the guidelines established by the Southern Association of Colleges and Schools for accreditation. The distribution of full-time and part-time curriculum and extension faculty across all 58 public institutions in the North Carolina Community College System as of October 1 of each year for 1983-1985 is shown in Table H.7. These data suggest that part-time faculty outnumber full-time by about two to one, and that the ratio of part-time to full-time faculty is increasing in two year institutions in the state.

TABLE H.5. 1978-1985 PERCENT FTE EMPLOYMENT TURNOVER BY VOCATIONAL PROGRAMS AREA IN NORTH CAROLINA PUBLIC SECONDARY SCHOOLS

Program Area	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Agriculture	11.22	10.84	11.42	13.11	9.70	8.99	9.30
Business	6.30	7.96	5.73	5.79	6.12	5.56	6.82
Home Economics	9.27	10.45	7.76	7.32	10.01	6.96	8.77
Marketing	10.61	10.11	6.18	9.29	10.33	9.19	8.11
Trade and Industry	8.61	9.05	9.11	9.16	7.91	9.23	9.38
Health Occupations	13.43	13.77	11.81	11.03	6.76	10.53	9.46
Prevocational	9.09	7.71	8.47	7.85	6.46	7.94	7.99
Industrial Arts	18.22	11.67	12.83	6.32	7.09	11.50	10.10
Handicapped or Disadvantaged	11.59	12.83	11.11	6.70	7.41	7.35	7.11

Source: Department of Public Instruction

TABLE H.6. TOTAL STAFFING REQUIREMENTS AND PROJECTED NUMBER OF NEW HIRES 1986-1987 THROUGH 1990-1991

Program Area	1986-87		1987-88		1988-89		1989-90		1990-91		1986-1991
			Total	New Hires	Total	New Hires	Total	New Hires	Total	New Hires	Total New Hires
Agriculture	335	13	320	11	301	5	290	14	280	15	58
Business Education	1295	77	1287	75	1263	60	1271	102	1283	108	422
Home Economics	824	31	796	30	759	20	742	44	724	42	167
Marketing	183	11	182	13	176	8	175	14	174	14	60
Trade & Industry	1136	91	1094	39	1042	27	1014	56	990	58	271
Health Occupations	155	16	153	10	152	11	153	14	154	14	65
Prevocational	665	24	654	36	648	41	666	71	664	54	226
Industrial Arts	329	36	335	33	338	30	343	34	353	39	172
Handicapped/Disadvantaged	228	41	241	32	248	27	254	28	261	28	156
Other Vocational Programs	23	-10	25	4	25	2	24	2	24	3	1
Total	5173	330	5087	283	4952	231	4932	379	4907	375	1598

TABLE H.7. 1983-85 NUMBER OF FULL-TIME AND PART-TIME CURRICULUM AND EXTENSION FACULTY ACROSS ALL 58 PUBLIC COMMUNITY COLLEGE INSTITUTIONS

Type of Faculty	Year	Permanent	Temporary	Permanent	Temporary
Curriculum	1983	3165	32	38	2635
	1984	3212	27	92	2885
	1985	3218	44	88	3323
Extension	1983	237	23	82	4130
	1984	315	51	84	4942
	1985	192	10	48	5673
Total	1983	3402	55	120	6765
	1984	3527	78	176	7827
	1985	3410	54	136	8996

Source: Department of Community Colleges